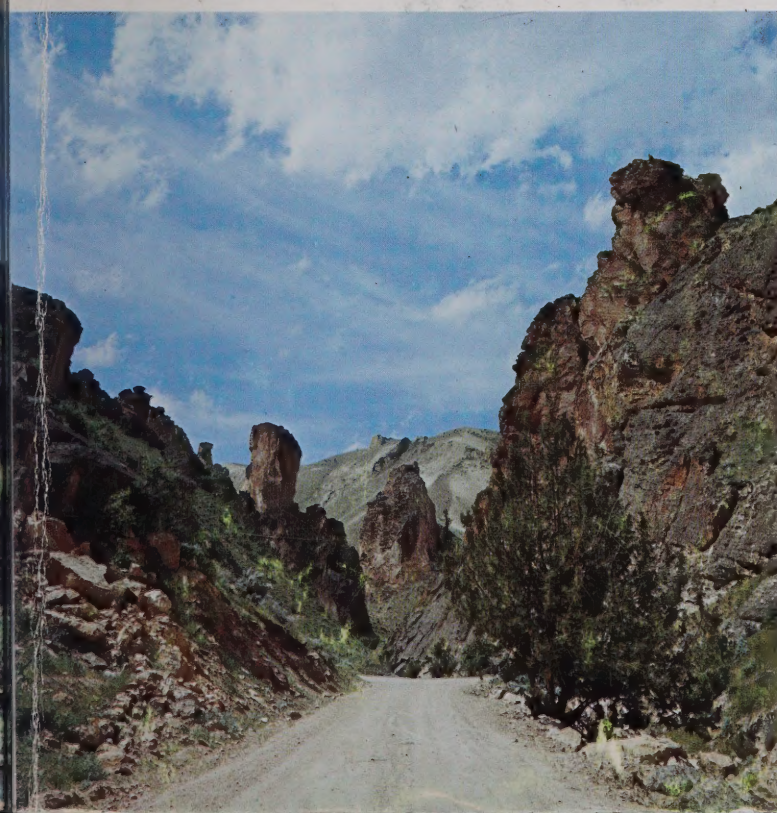


REF
OR/
ODOT
BIENNL
1971-72
C.2

OREGON STATE HIGHWAY COMMISSION BIENNIAL REPORT 1971 - 1972



THIRTIETH BIENNIAL REPORT

OF THE

Oregon State Highway
Commission

For the Period July 1, 1970 to June 30, 1972



OREGON STATE HIGHWAY COMMISSION

GLENN L. JACKSON, Chairman

FRED W. HILL, Commissioner

THADDEUS B. BRUNO, Commissioner

GEORGE M. BALDWIN, Administrator of Highways

TOM EDWARDS, State Highway Engineer



**OREGON STATE
HIGHWAY DIVISION**

HIGHWAY BUILDING • SALEM, OREGON • 97310

Salem, Oregon
July 1, 1972

HONORABLE TOM McCALL,
Governor of the State of Oregon.

Dear Sir:

In compliance with the provisions of ORS 366.485, we submit herewith the report of the Oregon State Highway Commission for the period from July 1, 1970 to June 30, 1972.

Respectfully yours,

OREGON STATE HIGHWAY
COMMISSION,

Glenn L. Jackson, Chairman

Fred W. Hill, Commissioner

Thaddeus B. Bruno, Commissioner

FOREWORD

Oregon law provides that the Highway Commission make a biennial report to the Governor which, in addition to other pertinent information, explains the work accomplished and accounts for the revenues received and the disbursements made during the period.

In preparing the report, it has been the aim of the Highway Department to assemble the data in a style that will permit anyone to quickly obtain a perspective of the condition of Oregon's Highway System. To accomplish this, a simple approach with appropriate graphical and pictorial data has been used. In addition to fulfilling the statutory requirement, the Highway Commission has provided an instrument that will permit any person to obtain a better understanding of Oregon's general highway problems.

CONTENTS

	<i>Page</i>
Highway History	6
Highway Organization	12
Highway Benefits and Miscellaneous Activities	26
Section Reports	32
Accounting Section	34
Bridge Section	35
Commission Secretary	38
Construction Section	39
County and City Section	42
Design Section	45
Location Section	47
Maintenance Section	48
Materials and Research Section	56
Parks and Recreation Section	58
Personnel Section	66
Planning Section	68
Programing Section	70
Public Affairs	72
Right of Way Section	73
Traffic Engineering Section	75
Statewide Distribution of Highway Contract Work	78
Region 1	80
Metropolitan Section	86
Region 2	90
Region 3	96
Region 4	102
Region 5	108
Income and Expenditures	114
Projected Activities	122



Pacific Highway south of Grave Creek Summit in Josephine County - 1918

HIGHWAY

The history of state highways in Oregon has been one of continuing progress. The state's highway program was launched in 1913 when the Legislature authorized formation of a State Highway Department, the designation of a state highway system, and a 1/4-mill property tax levy to finance the Department's activities. In Oregon at the time of this legislative action, there were no paved or oiled roads and only a few hundred miles of roads with width, alignment and surface sufficiently adequate to warrant their use by automobiles—and then only during the dry summer months and at low speeds.

The originally designated highway system was composed of 1,070 miles of primary or main

trunk roads and 1,830 miles of secondary roads. First construction was on the Pacific and Columbia River Highways in Clatsop, Columbia, Hood River, Jackson, Multnomah, Sherman, and Washington Counties—this construction, financed principally by county bond issues, was performed by contract with construction engineering handled by the Highway Department.

By 1917, the number of motor vehicles in the state had increased from 11,800 to 48,600, and the demand for improved roads over which to operate these vehicles had become so great that the Legislature authorized a \$6,000,000 bond issue, which was ratified by popular vote. In 1919, an additional \$10,000,000 issue of bonds



Myrtle Creek Bridge on the Pacific Highway completed in 1922

HISTORY

was authorized, and in the same year the Legislature imposed a 1-cent per gallon gasoline tax. In 1920, 1921 and 1923 additional bonds were sold, making a total of \$42,000,000 of bond funds available for highway improvements.

Oregon was the first state to adopt a gasoline tax as a source of income for road purposes. Action initiating the tax was taken by the Legislature in 1919 and became effective on July 1, 1919.

Oregon's lead in the use of gas tax for highway purposes was followed promptly by other states, and within a few years became the main source of highway revenue for all states

throughout the nation. The success of the one-cent gas tax and the need for increased revenue to meet the demand for highway improvements soon led to increasing the tax rate. The following table indicates the years in which increased rates became effective in Oregon:

Year	Gas Tax
1919	1 cent
1921	2 cents
1923	3 cents
1930	4 cents
1933	5 cents
1949	6 cents
1967	7 cents

The 1920 gasoline sales amounted to 48 million gallons, with a net income to the highway fund of \$464,000. In F.Y. 1971, gasoline sales amounted to an estimated 1.078 billion gallons, with a net income to the highway fund of \$72,250,000.

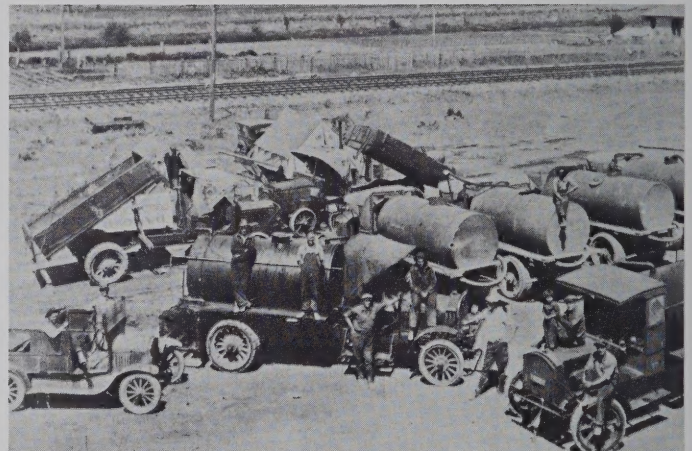
By 1924, motor vehicle registrations had increased to 166,000. During the 10-year period, 1914 thru 1923, motor vehicle revenue for highway improvements increased from \$250,000 derived from the 1/4-mill property tax levy to \$6,000,000 annually derived from the property tax levy, license fees and gasoline tax. Federal-aid allotments began in 1917 at \$78,700 and in ten years had increased to \$1,500,000 annually.

Oregon ranked among the top 10 states in those early years of highway development, heralding Oregon's enduring leadership in highway progress. Accomplishments during this first 10 years included grading and paving of the Pacific Highway from border to border, and grading and paving the Columbia River Highway from Portland to The Dalles. During this first decade of highway growth, \$78,000,000 was spent for highway construction. The designated state highway mileage increased from 2,900 to 4,464. The Department completed 2,174 miles of grading, 1,861 miles of rock surfacing, and 720 miles of pavement in place (170 miles of concrete and 550 miles of bituminous pavement).

In addition to the work accomplished by the Highway Commission, some counties and incorporated cities continued to make highway improvements in their area, bringing total improvements to the highway system to 1,948 miles of rock surfacing and 879 miles of paving. Approximately 1,000 bridges of standard design over 20 feet in length had also been completed.

In 1917, expenditures amounted to \$944,000, the major portion of which was used for construction. Seventy-nine employees handled the Highway Department's operations that first year. In contrast, expenditures by the Commission for fiscal year 1971 were \$191,700,000. The major portion is still allotted to construction improvements. The Commission's responsibilities have changed from advisors to counties and overseers of construction of an improved highway system to the present widely diversified operation, including: construction and

maintenance of a modern, everchanging highways system; traffic and safety control; construction, operation and maintenance of the finest state parks system in the country; construction and maintenance of bicycle trails; travel information and promotion; cooperative endeavors with counties and cities; operation of a state-wide radio system in cooperation with the State Police; and administration of the Scenic Waterways System and Beach Control laws. Right-of-way acquisition and disposition has also become a major part of the operation; whereas in 1917, all right of way was donated to the state for road-building purposes.



A typical 1925 highway construction and maintenance crew located near Redmond

In 1917, assistance to counties was limited to design and preliminary engineering for construction of roadways and bridges. This assistance is still available today, as well as aid in construction of the federal-aid county road system. On this system, the state handles the contracting and construction of a project and shares the cost with the county and the federal government.

In 1919, a testing laboratory was set up to test all material used in highway construction for conformance to specifications.

By 1920, need for a uniform signing system of Oregon's highways was apparent. During that year, the Pacific Highway was completely signed with permanent signs at all crossroads showing the direction and mileage to the nearest town,

the nearest larger cities, and other major points of interest to the traveling public. Between crossroads, highway route markers were provided at regular intervals of approximately one mile. In addition, signing was underway on the Columbia River Highway, Tualatin Valley Highway and McMinnville-Tillamook Highway. In 1929, Oregon adopted a uniform system of warning and directional signing that was established for use throughout the United States.

Showing considerable foresight, the Highway Commission proposed legislation for protection of the natural scenic features of the highway system during the 1919-1920 biennial period. To preserve the natural beauty for later generations, a proposal was established to plant trees and retain a belt of standing timber along highway right of way, and these scenic areas are still being enjoyed by the traveler today. Also proposed at that time was the development of campsites along the highways for recreational use. These sites were the forerunner of our park system that we enjoy today.

The 1921 Legislature authorized the Highway

Commission to acquire park sites for development of a state parks system. In many instances these sites were donated to the state for park purposes by public-spirited citizens. In 1929, Sam Boardman was appointed the first State Parks Superintendent, and largely through his efforts and foresight, Oregon has built a state parks system that is unequalled. Development of recreation areas, overnight camping sites, and picnic facilities has made Oregon a vacationer's paradise and has helped build the tourist industry to one of the three largest industries in the state. At present the number of state parks and waysides totals 232 and comprises 87,749 acres of land.

Roadside rest areas were also beginning to appear in the early 1920's, and drinking fountains were located in those areas possessing a source of pure water.

Control of outdoor advertising was a problem in the early years as well as today. The Commission issued instructions in 1919 to remove all advertising signs within the highway right-of-way limits as provided by law.



Springfield bridge crossing the Willamette River - 1929

Maintenance of highways through 1920 was a responsibility of the counties, with the state sharing in the cost of this operation. Beginning April 1, 1921, the state assumed more responsibility in the matter by taking over maintenance on all newly completed sections of highways. Snow removal operations by the state began in the winter of 1922-23. Prior to that time snow on the road too deep for travel stopped traffic until warm weather cleared the highways.

Prior to 1929, Multnomah County handled details of road construction and maintenance of roads within its boundaries through their road department. On January 1, 1929, the first unit of this county's road system was transferred to the Oregon State Highway Commission. This section included the Interstate Bridge, which was completed by Multnomah County and Clark County, Washington, and opened to traffic in 1917.

The contract for the first bridge crossing of the six major waterways along the Oregon Coast Highway was awarded on January 16, 1930. The Rogue River Bridge north of Gold Beach was the longest and most expensive structure to be contracted on the state highway system up to that date. The total length of this structure was 1,898 feet and cost \$653,000.

Structures crossing the remaining five waterways were contracted in 1934 and were completed two years later at a cost of \$5,436,000. The original plans called for these structures to be toll bridges. The 1935 Legislature passed a bill authorizing the Highway Commission to operate these bridges toll-free and to finance the construction with general revenue bonds.

The completion of these six bridges eliminated all ferry crossings along the Oregon Coast Highway except the Columbia River crossing at Astoria. The Astoria Bridge was completed in 1966, with a \$24,000,000 bond issue appropriated by the 1961 Legislature. The opening of the Astoria Bridge provided a vital link in the coastal highway.

In 1935, the thirty-eighth Legislative Assembly granted authority to the State Highway Commission to establish a Travel Information

Bureau within the Highway Department for the purpose of attracting additional tourists to Oregon. This division was organized in 1935 and expended \$44,500 for tourist promotion during the first biennial period of operation.

During World War II construction of highways came to a halt, and efforts were concentrated on maintenance of the highway system. Due to the shortage of help, the department turned to the women of Oregon to help in this emergency. The ladies turned out in force to drive trucks, operate heavy equipment and generally maintain the highways throughout the state for the duration of the war.

Due to increasing highway needs and lack of revenue to carry on a construction program large enough to keep up with these needs, the 1951 Legislature authorized sale of \$72,000,000 in general revenue bonds to finance a highway construction program. These bonds were used for improving highways throughout the state. Some of the more important projects constructed with this money were the Portland-Salem Expressway and the Banfield Expressway; reconstruction of narrow, winding sections of the Pacific, Oregon Coast, The Dalles-California and Columbia River Highways.

This bond program gave Oregon a starting point to modernize the state's system of highways. In September of 1956, when this bond program was almost completed, Congress passed a bill to construct 41,000 (now increased to 42,500) miles of Interstate highways that will make it possible to travel from coast to coast without a stop for traffic signals. When this network of modern highways is completed, it will be possible to drive onto the Interstate highway in downtown Portland, Eugene, Salem, or almost any other city, and continue to almost any major city of America without stopping at an intersection or traffic signal. Oregon has 735 miles of the Interstate highway system within its boundaries, of this mileage, 619 miles are completed, 70 miles are presently under contract and 46 miles remain to be contracted.

The benefits in building a nationwide system of multi-laned controlled access highways are already apparent in increased safety and reduced travel time.



Oiling crew working on the Pacific Highway north of Eugene in 1929

After the hot mix was placed on the roadbed it was leveled by motor grader and a crew of rakers



The finishing touches were handled by a steam roller to provide a well compacted and smooth surface



Oregon State Highway Commission

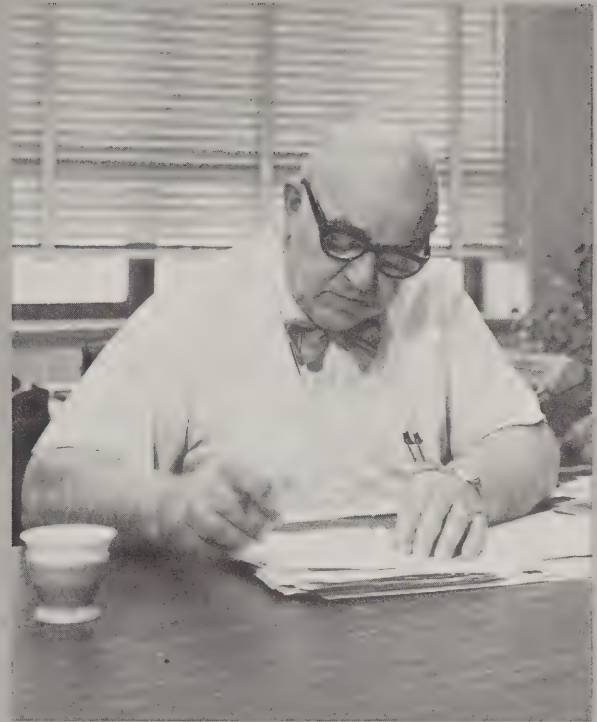
HIGHWAY

Oregon State Highway Division Headquarters Building in Salem





George Baldwin — Administrator of Highways



Tom Edwards — State Highway Engineer

ORGANIZATION

STATE HIGHWAY COMMISSION

The three members of the State Highway Commission are appointed by the Governor for three-year terms, with each member's term expiring on March 31 of successive years. Upon expiration of a member's term, the Governor may either reappoint the incumbent or appoint a new member to the Commission. In the event of a vacancy for any cause, the Governor appoints a member to serve for the unexpired term. Oregon law provides that not more than one Commission member shall be appointed from any one Congressional district. Members of the Commission serve without pay; they are reimbursed only for those expenses incurred in the performance of their duties.

OREGON STATE HIGHWAY COMMISSION

Present Members

Glenn L. Jackson, Medford appointed April 27, 1959
Fred W. Hill, Helix appointed April 1, 1967
Thaddeus B. Bruno, Portland appointed April 23, 1968

Former Members and Terms

E. J. Adams, Eugene February 28, 1917 to March 31, 1918
W. L. Thompson, Pendleton February 28, 1917 to October 15, 1919
S. Benson, Portland February 28, 1917 to November 15, 1920
R. A. Booth, Eugene April 1, 1918 to May 28, 1923
J. N. Burgess, Pendleton October 16, 1919 to November 21, 1919
E. E. Kiddle, Island City November 26, 1919 to December 28, 1920
J. B. Yeon, Portland November 22, 1920 to March 31, 1923
W. B. Barratt, Heppner January 8, 1921 to March 17, 1923
Wm. Duby, Baker March 27, 1923 to July 31, 1927
H. B. Van Duzer, Portland April 1, 1923 to October 7, 1931
W. H. Malone, Corvallis May 28, 1923 to March 31, 1927
C. E. Gates, Medford April 1, 1927 to March 11, 1931
Robert W. Sawyer, Bend August 1, 1927 to May 28, 1930
M. A. Lynch, Redmond May 29, 1930 to August 1, 1931
Chas. K. Spaulding, Salem March 11, 1931 to February 16, 1932
Wm. Hanley, Burns August 1, 1931 to February 16, 1932
J. C. Ainsworth, Portland October 8, 1931 to February 16, 1932
Leslie M. Scott, Portland February 17, 1932 to March 31, 1935
Carl G. Washburne, Eugene February 17, 1932 to October 9, 1935
E. B. Aldrich, Pendleton February 17, 1932 to March 31, 1940
F. L. Tou Velle, Jacksonville October 9, 1935 to March 31, 1939
Henry F. Cabell, Portland April 1, 1935 to February 28, 1943
Huron W. Clough, Canyonville April 1, 1939 to April 7, 1943
Herman Oliver, John Day April 1, 1940 to March 31, 1943
Merle R. Chessman, Astoria April 8, 1943 to October 1, 1946
T. H. Banfield, Portland February 28, 1943 to March 31, 1950
Arthur W. Schaupp, Klamath Falls April 1, 1943 to March 31, 1949
Ben R. Chandler, Coos Bay October 1, 1946 to March 31, 1957
Chas. H. Reynolds, La Grande April 1, 1949 to March 31, 1958
Robert B. Chessman, Astoria April 1, 1957 to April 26, 1959
M. K. McIver, Portland April 1, 1950 to March 31, 1962
Kenneth N. Fridley, Wasco April 3, 1958 to March 31, 1967
David B. Simpson, Portland April 1, 1962 to March 5, 1968

ADMINISTRATION & ENGINEERING

The Administrator of Highways—The chief administrative officer is appointed by the Commission for a four-year term and may be reappointed for additional terms at the Commission's discretion.

The State Highway Engineer, Deputy Highway Engineer and Assistant Highway Engineers appointed by the Commission are required to be civil engineers, qualified by technical training and practical experience in highway engineering.

Subject to the provisions of the State Merit System law, the Commission has authorized the Administrator of Highways to employ staff engineers, engineers and technical assistants, and other personnel as in his judgment may be necessary to conduct the business and activities of the State Highway Division.

Under the executive staff, the organization is subdivided into sections. Field duties relative to

the supervision, direction, maintenance and construction of state highways are delegated to five Regional Engineers with headquarters at Portland, Salem, Roseburg, Bend and La Grande, and a Metropolitan Engineer located in the Portland metropolitan area.

Engineering services on construction projects are provided by resident construction engineers working under the supervision of the Regional Engineers or the Metropolitan Engineer. Each resident engineer is placed in direct charge of one or more contract jobs and is responsible for control of the contractor's operations to assure compliance with plans and specifications.

When highway location surveys are to be made, the Location Engineer assigns a locating engineer to perform the work under the direct supervision of the Regional Engineer.

Traffic control is directed by region traffic engineers. They are responsible for investigation and recommendations for correction of dangerous intersections or sections of highways which are brought to their attention through study of accident records, traffic volume surveys, vehicle speeds and physical conditions.

Maintenance activities are directed by district engineers; each engineer is responsible for the work in a specific geographical district within each division. Working directly under the district engineers are section crews who perform routine maintenance duties. In addition, a varying number of extra gang crews are employed to perform special tasks, such as removing slides, patching pavements and repairing bridges.

The Maintenance Section includes the operation of equipment shops and storerooms at Bend and La Grande, with the main shops and storeroom headquarters located at Salem. These shops service, repair and distribute equipment used by the Highway Division and manage the storage and distribution of various materials, supplies and parts as required.

THE SECRETARY

The Commission appoints a Secretary and an Assistant Secretary to hold office for a term of four years unless reappointed. The Secretary and his assistant keep a complete transcript of all



Forest Highway project between Alder Creek and Wildwood on the Mt. Hood Highway US 26, Clackamas County

meetings, actions and other Commission business; control and file all contracts, documents, minutes and other records of the Commission; and perform duties that normally come within the scope of this office.

THE LEGAL COUNSEL

All legal services required by the Highway Division are furnished through the office of the Attorney General. At present the Attorney General has assigned a Chief and Assistant Chief Counsel with the necessary legal staff to handle the legal services of the Highway Commission.

THE CONTROLLER

The Controller is appointed by the Commission for a four-year term to handle the fiscal affairs of the State Highway Division and is reappointed at the option of the Commission. The Controller and his staff audit, approve and register all claims for expenditures from the highway fund; and record all revenue received from the motor vehicle fund, park user fees, cooperative projects, and federal-aid through the Federal Highway Administration.

STATE PARKS AND RECREATION

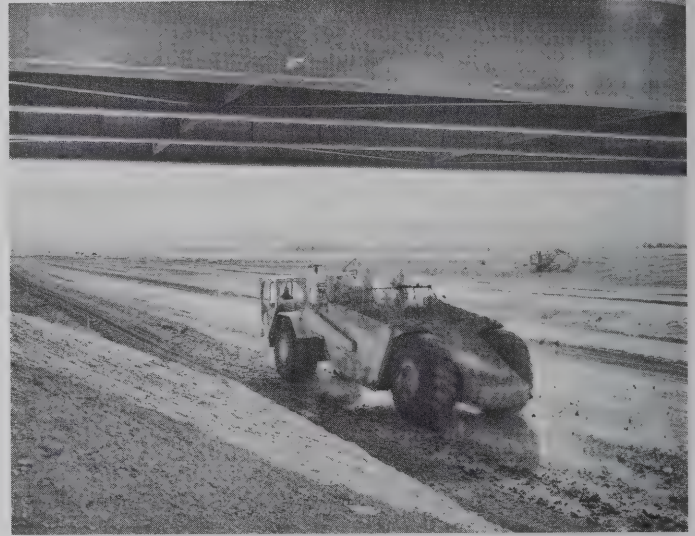
The Highway Commission has under its jurisdiction the State Parks and Recreation Section. The State Parks Superintendent is appointed by the Commission to administer and operate Oregon's state park system and recreation facilities.

The Commission also appoints, on recommendation of the State Parks Superintendent, a Director of Recreation to coordinate for public use, statewide recreation programs, facilities and activities with local governments and agencies.

THE STATE HIGHWAY SYSTEM

The state highway system, composed of a network of primary and secondary highways selected by the State Highway Commission, includes those highways designated by the State Legislature. It comprises over 7,500 miles of roads which extend to every area of the state. In addition, the Highway Commission exercises certain jurisdiction on approximately 4,900 miles

of county roads and city streets which are eligible to receive financial aid from the federal government. Nearly all of the state highway system is also on the federal-aid system, and a portion is also on the federal forest highway system. Roads making up the system are classified into several categories in order to meet eligibility requirements of the federal government in connection with federal-aid highway financing.



Construction equipment on the Old Oregon Trail I-80N north of Baker

For the purpose of clarification and to indicate the distinction between such terms as "throughway", "freeway" and "expressway", definitions of these commonly used highway terms follow.

Control of Access—This is a condition where the right to enter or leave a highway is controlled by public authority. Access may be fully controlled, in which case preference is given to through traffic and providing access connections at traffic interchanges only. Access may also be partially controlled, in which instance preference is given to through traffic to a degree that direct access is permitted at designated locations and may permit some grade crossings and private road connections.

Expressway—A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at intersections.

Freeway—A divided arterial highway for through traffic with full control of access and grade separations at intersections.

Throughway—This term is one of more local than national usage. In Oregon's case, the Highway Commission has designated, as is provided by law, certain of the state's highways as throughways. These highways comprise most of the state's primary highways and a few of the more important secondary highways. Our statutes define a throughway as a highway or street especially designed to handle through traffic and to which abutting landowners have limited or no rights of access. On Oregon's system all freeways are throughways, but many throughways are not freeways.

The highway system over which the Highway Commission exercises complete control is divided into two classes, State primary highways and State secondary highways.

State Primary Highways—These highways provide principally for through traffic movements or traffic that is moving from city to city as distinguished from that type of traffic whose origin and destination is in close proximity. The basic primary network is provided by statute and additions thereto are made by the Highway Commission by legislative authority. Nearly all state primary highways are throughways; some have been constructed as expressways. Those on the federal Interstate highway system are being constructed as freeways.

State Secondary Highways—Legislative action grants the Highway Commission authority to designate a system of secondary highways with approval of the appropriate county courts. These highways are designed to provide for farm-to-market traffic, for feeder service to primary routes and for the type of traffic having more of a local characteristic than that using the primary routes. Incorporation of existing county roads into the secondary system is by joint action of the Highway Commission and the respective county court. The counties, however, do not bear any financial responsibility for either construction or maintenance on state secondary highways. The majority of secondary highways are not throughways nor are they constructed as freeways or expressways. In many cases, however,

they are constructed on right-of-way with partial access control.

FEDERAL-AID HIGHWAYS

Federal-aid highways are those selected by mutual agreement between the Federal Highway Administration and the State Highway Commission to be placed on the federal-aid system. Such highways are eligible to receive funds for construction which have been authorized by the various federal-aid highway acts. These acts of Congress make certain sums available for Interstate and defense highways, for primary highways, for secondary highways and for the extensions of the primary and secondary highways into approved urban areas. Nearly all highways on the state highway system are on the corresponding federal-aid highway system with few exceptions.

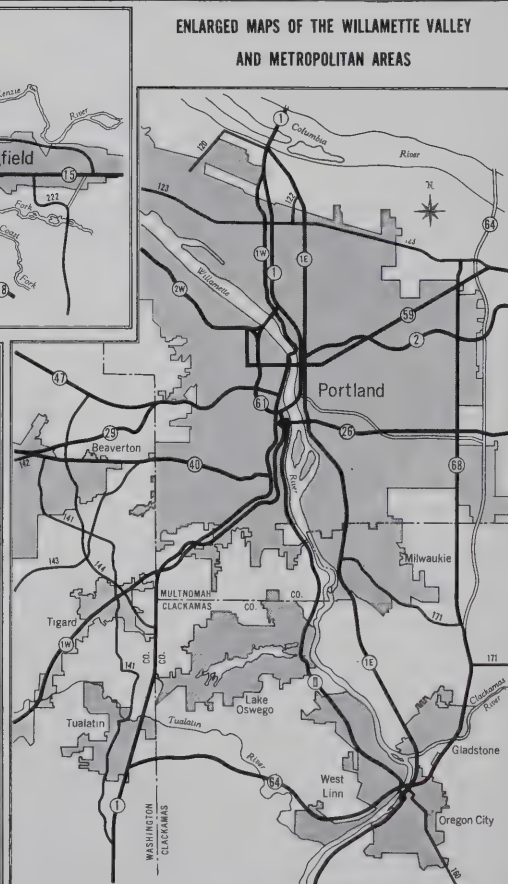
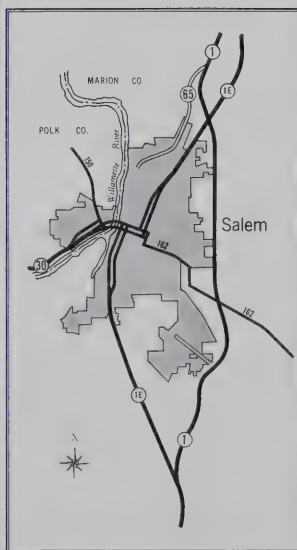
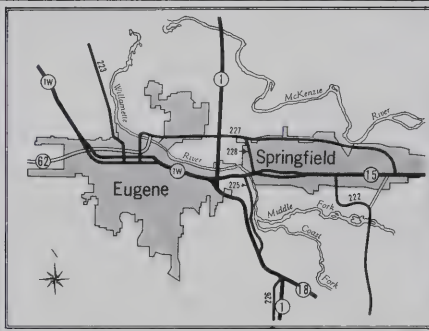
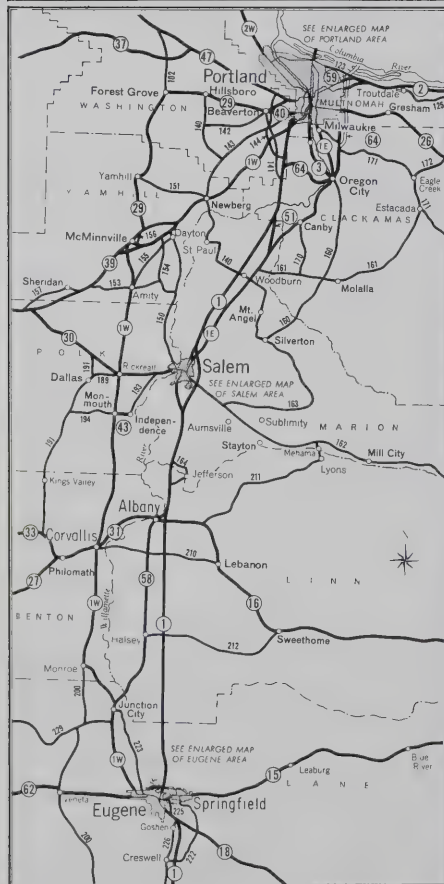
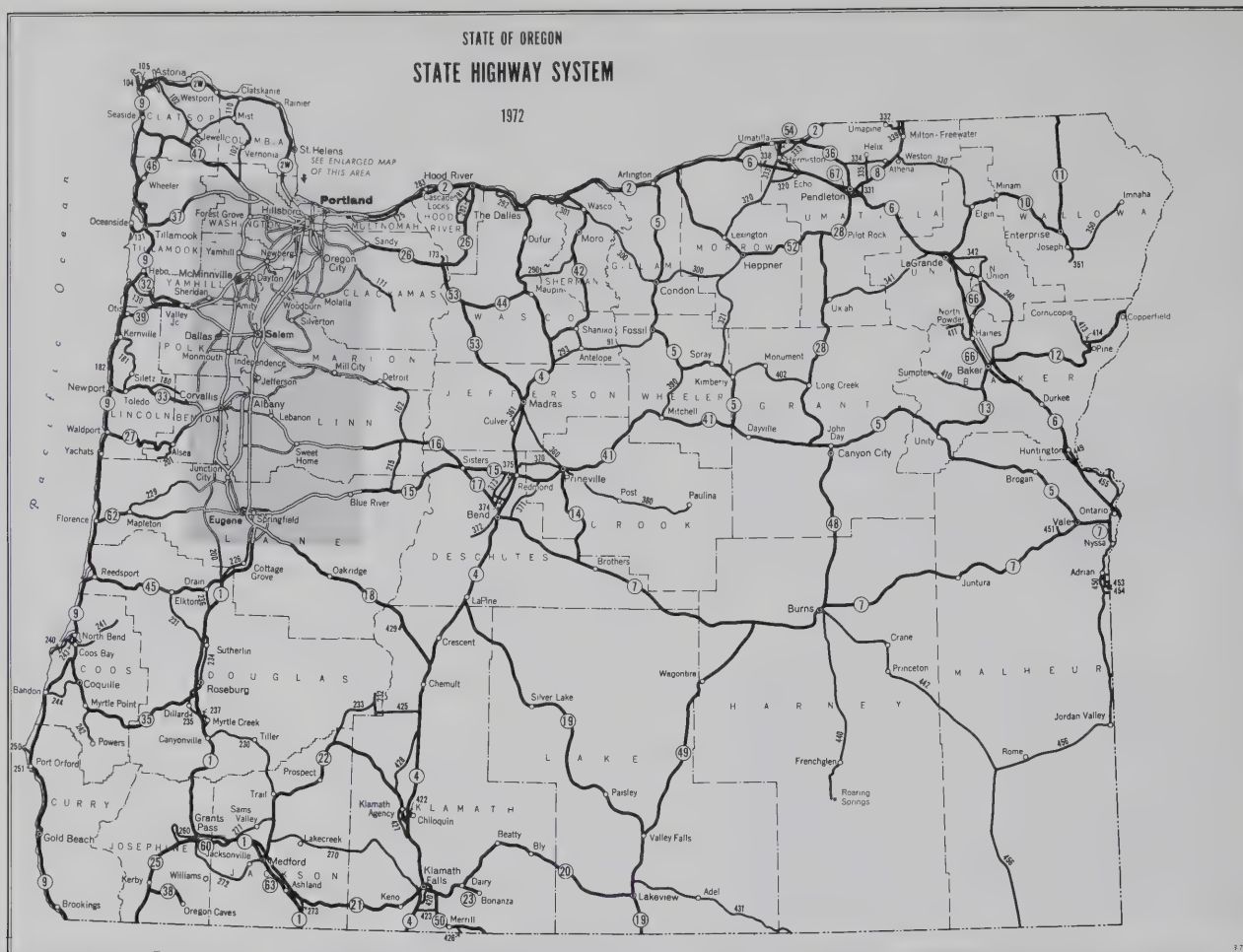
Interstate Highways—The national system of Interstate and defense highways is composed of 43,000 miles of the more important trunk highways in the nation. In Oregon there are 735 miles on this system which are included as a part of the state's primary and secondary network. Interstate highways are also on the federal-aid primary system. The table below shows in detail the routes that make up the system.

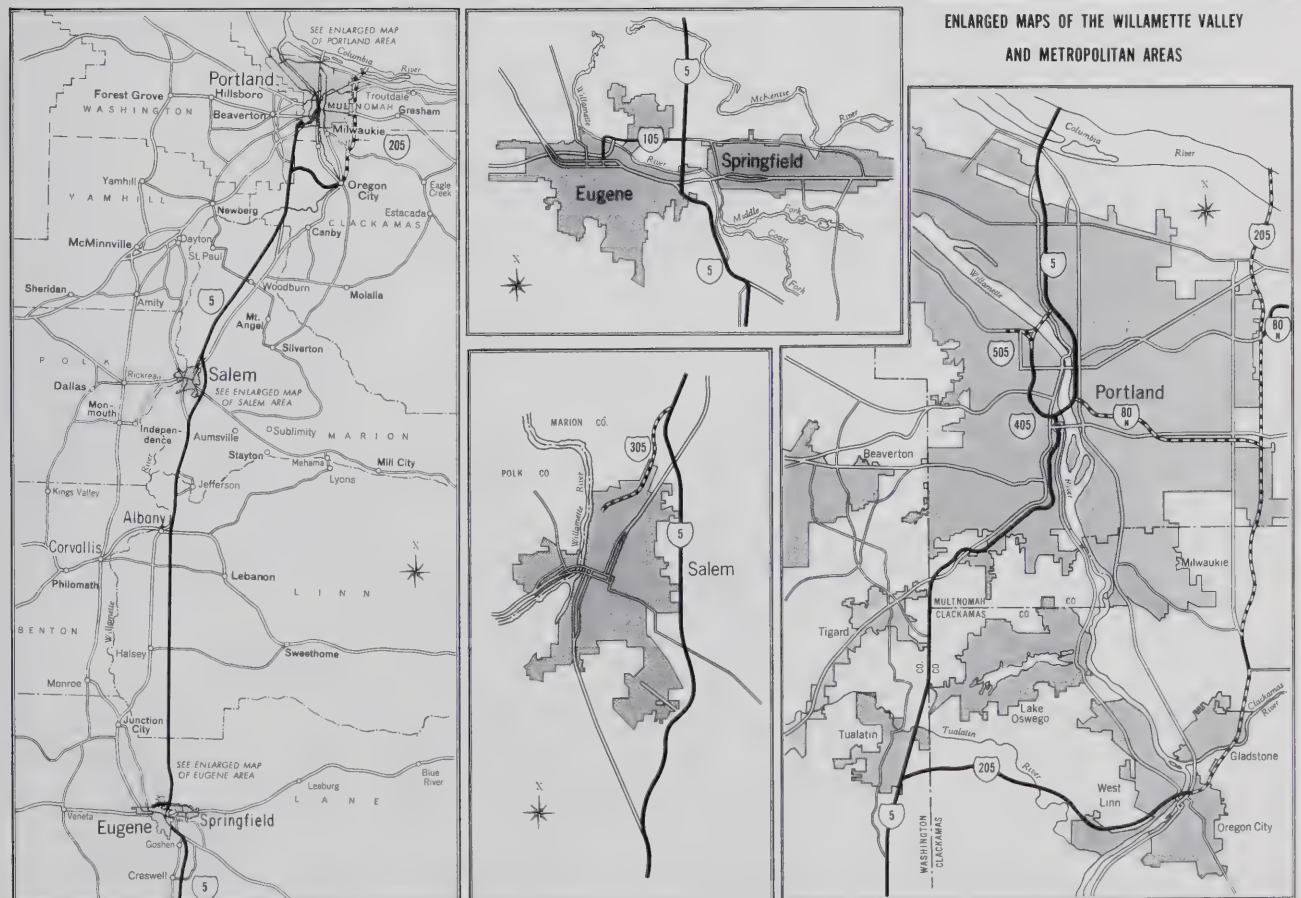
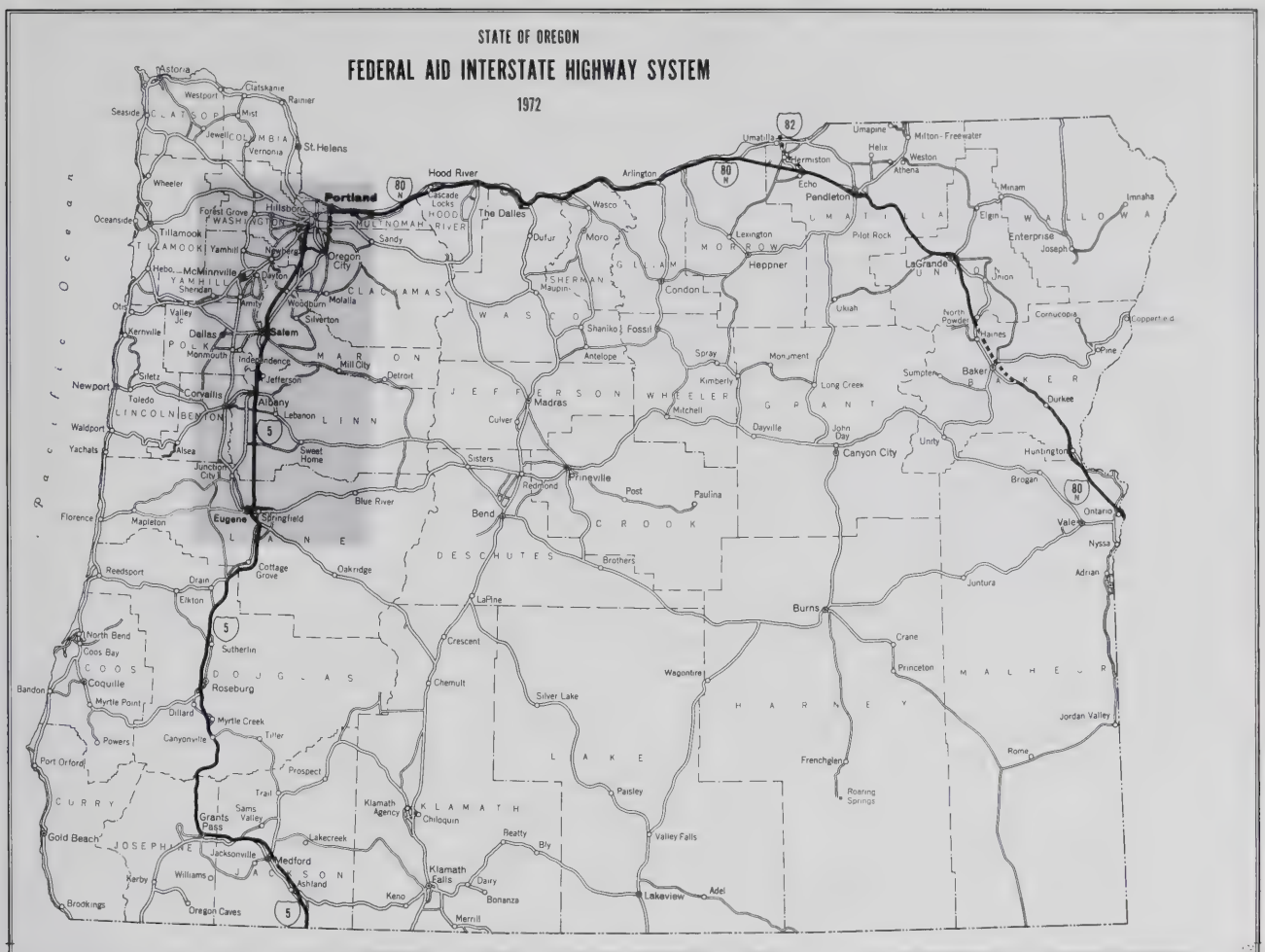
<i>Interstate Route No.</i>	<i>Route Name</i>	<i>Miles</i>
5	Pacific Highway	308.4
80N	Upper Columbia River and Old Oregon Trail Highways . . .	377.9
82	Umatilla-Stanfield	14.8
105	Eugene Spur	3.5
205	East Portland Freeway	22.2
305	Salem Spur	3.3
405	Stadium Freeway (Portland)	3.4
505	Industrial Freeway (Portland)	1.4
		<hr/> 734.9

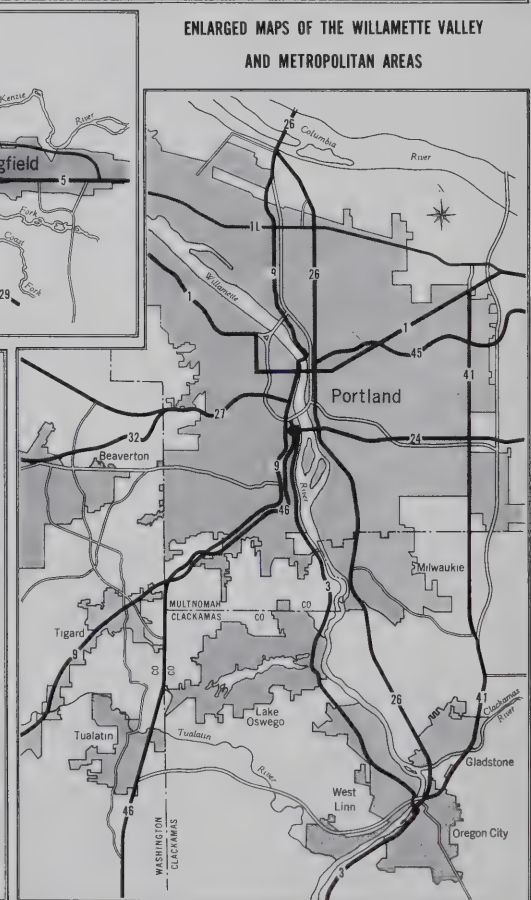
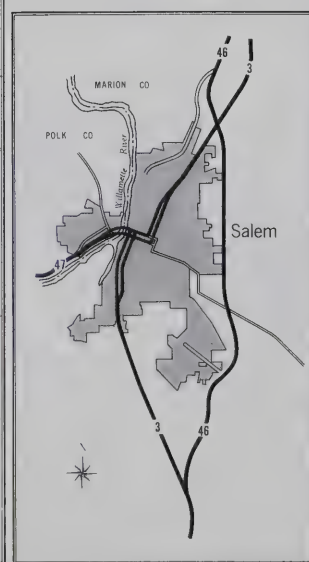
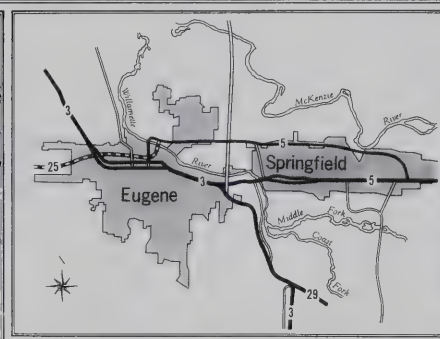
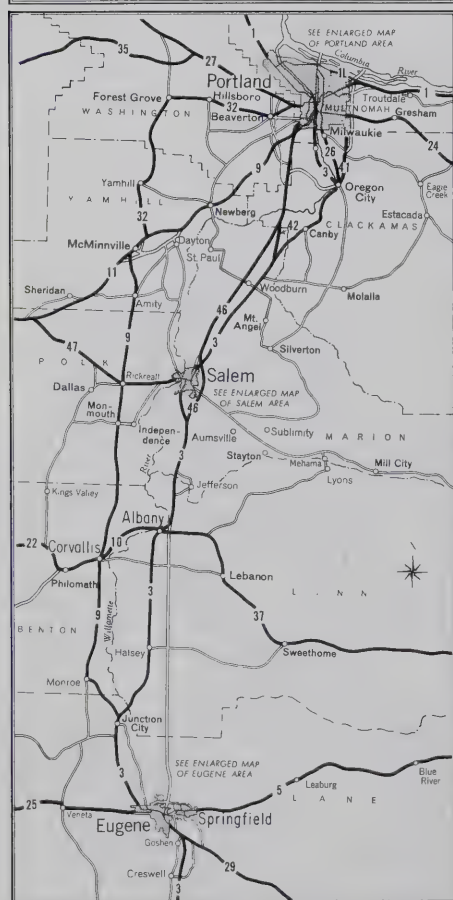
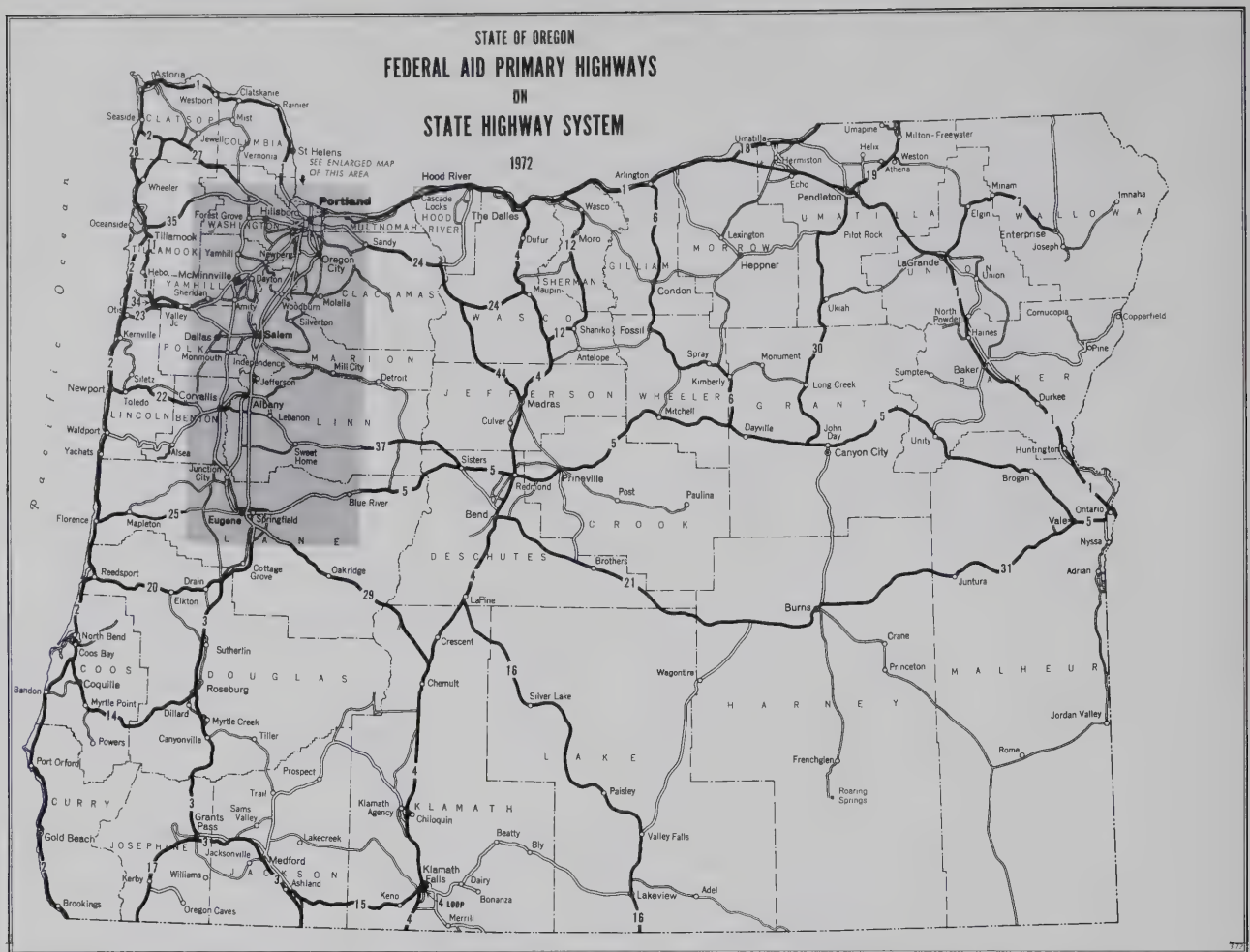
Interstate highways are constructed as freeways and the construction costs are shared nominally on the basis of 90% by the federal government and 10% by the state. Because of the large areas of public domain in Oregon, an advantage in matching ratio is enjoyed by the state, which at present is 92.2% federal and 7.8% state. It has been estimated that the nationwide cost of this system will be 70 billion dollars.

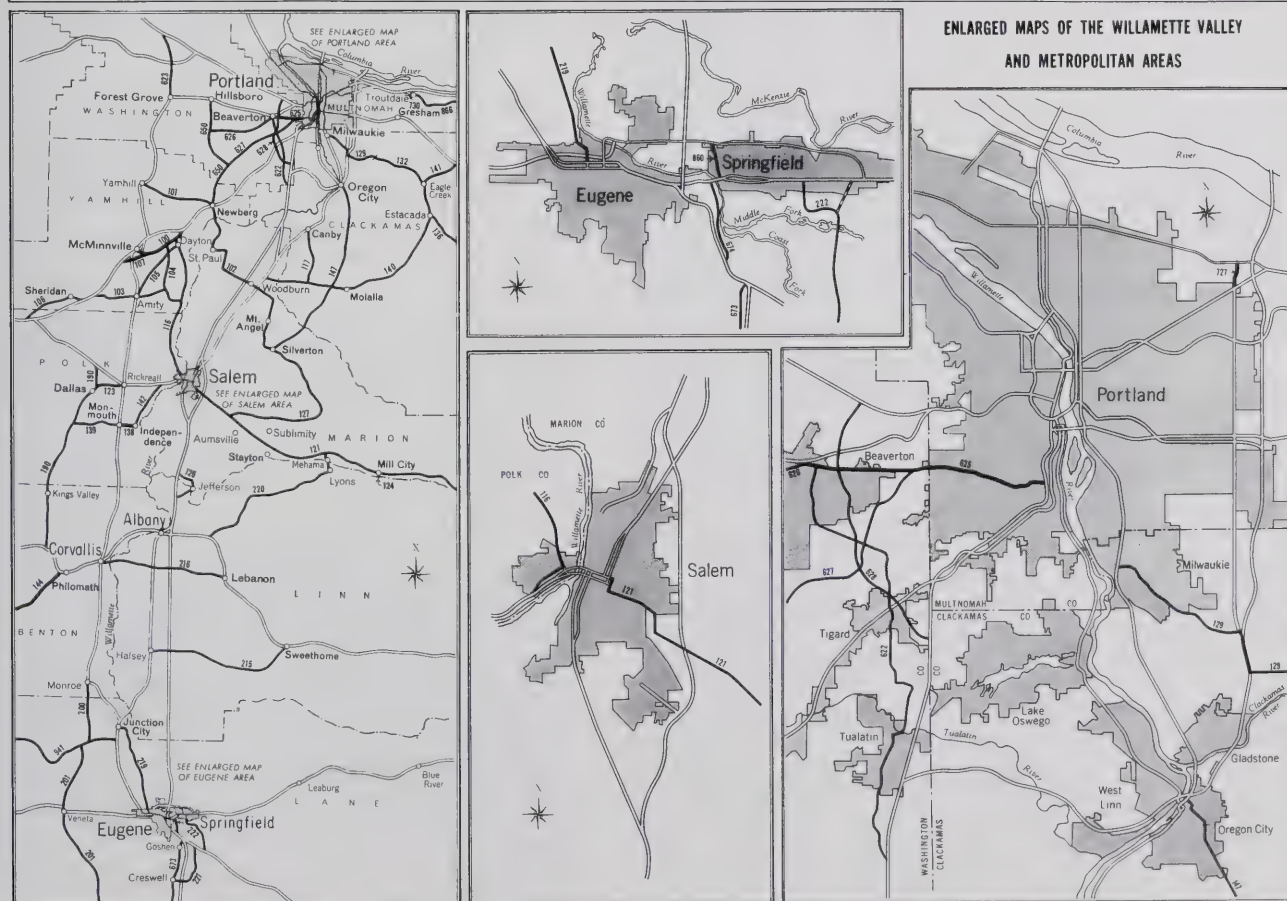
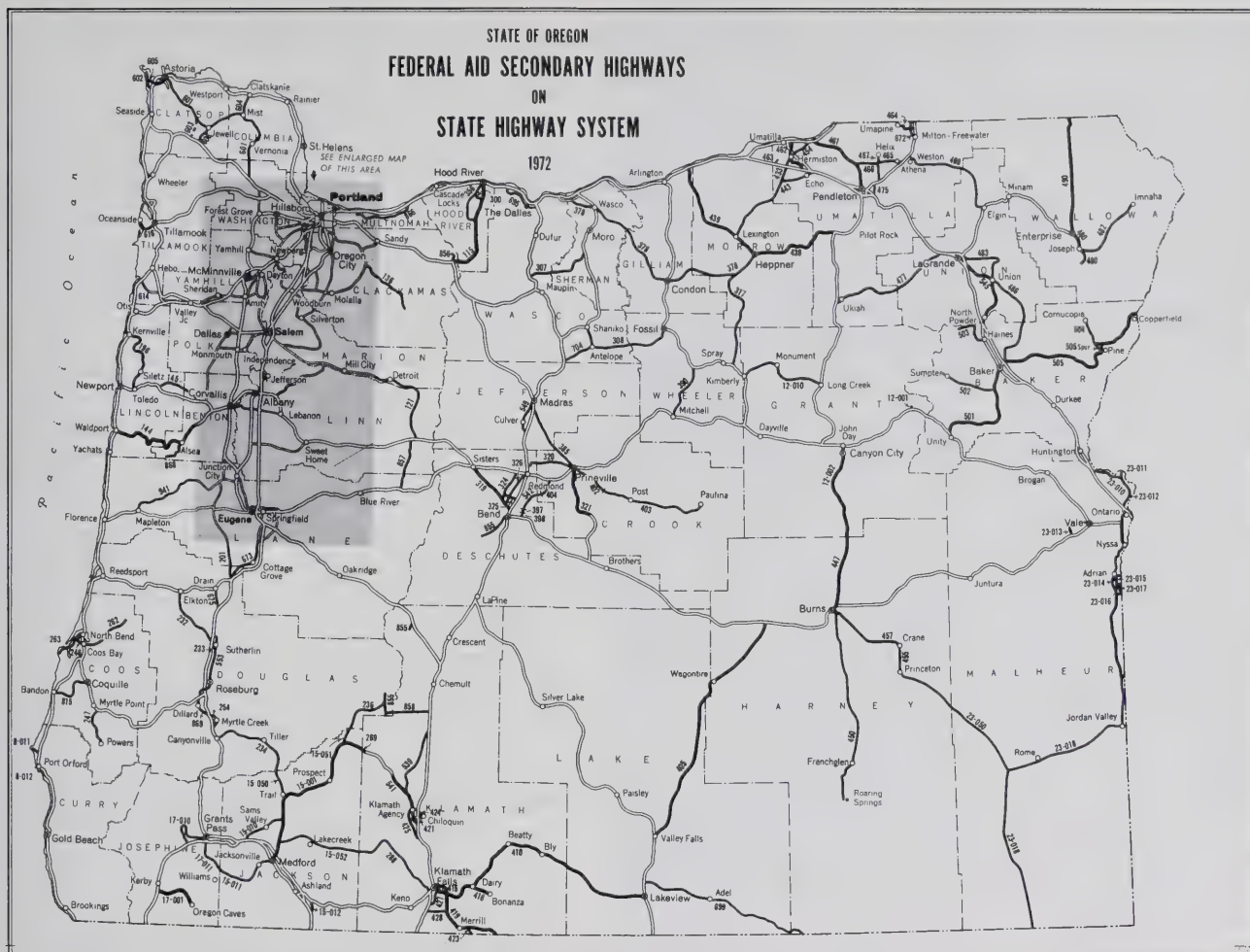
STATE OF OREGON STATE HIGHWAY SYSTEM

1972











La Grande bypass on the Old Oregon Trail I-80N

Federal-Aid Primary Highways—This group of highways comprises arterial routes in the state other than the Interstate highways. Highways on this system are usually not constructed as freeways, they are in most cases throughways and on right-of-way that is partially access controlled. Normally the cost of construction is shared 50% by the federal government and 50% by the state. Because of the public domain area in Oregon, the ratio in this state at present is 63.5% federal and 36.5% state. Mileage of federal-aid primary highways (including Interstate) is limited to 8% of the total mileage of public roads in existence in 1921. This places the limit in Oregon at 3,346 miles, which is exclusive of mileage within national forests, federal reservations and approved urban areas. In the system as now approved there are 4,084 miles, including 455 miles in national forests, 48 miles on federal reservations, 170 miles of nonchargeable Interstate and miscellaneous routes, and 437 miles in urban areas, leaving a net chargeable federal-aid primary mileage of 2,988.

Federal-Aid Secondary Highways—This class of highways is the principal farm-to-market roads, mail delivery routes, public school bus routes, and highways and roads carrying traffic having high local use characteristics. There is no limitation on the mileage that may be included in this system except that it should not be greater than that which can be improved within a reasonable time. Designation of highways for this classification is made by the Highway Commission and local county officials with the approval of the Federal Highway Administration. The secondary federal-aid system is unique in that part of it is composed of state highways (the majority being state secondary highways) and part is composed of county roads. Federal regulations require that 50% of federal secondary money be expended on roads of local jurisdiction (county roads). The matching ratio on federal secondary funds is the same as for federal primary funds. By agreement with the Oregon counties, construction costs of federal-aid secondary highways that are on the county road system is federal approximately 60%, county 20% and state 20% of the construction costs. The Highway Division makes the surveys, designs and conducts other preliminary engineering functions as are necessary at Highway Division expense, and the counties provide the right-of-way as may be necessary at county expense.

At present the federal-aid secondary system consists of 3,520 miles of state highways and 5,032 miles of county roads. These highways are usually not throughways, freeways or



Gold Hill Interchange overcrossing on the Pacific Highway I-5

expressways. Highways on the state secondary system are often constructed on partially controlled access right-of-way.

Extensions of Federal-Aid Primary and Secondary Highways In Urban Areas—A portion of the federal-aid apportionment to the various states is designated to be expended on those sections of federal-aid primary and secondary highways that extend into official urban areas. An urban area is any incorporated city or town of 5,000 population or more, and may also include any area adjacent to such city or town that has urban characteristics. An adjacent area to be eligible to receive federal-aid urban funds must first be approved by the Federal Highway Administration. Urban funds cannot be expended outside of approved urban areas. Primary and secondary funds may be expended on their respective system without regard to urban limits.

Federal-Aid Urban System—The Federal-Aid Urban System is established in each urbanized area to serve the major centers of activity. Routes selected for the system are those corridors with the highest traffic volumes and longest trips that best serve the goals and objectives of the community. No route on this system can be included on any other Federal-Aid System, but must connect with another route on a Federal-Aid System. Routes are selected by local officials and the Highway Commission subject to approval by the Federal Highway Administration. The matching ratio of urban system funds is the same as for federal primary and secondary funds with the state and city each paying 50% of the required matching funds. Oregon's federal appropriation for fiscal year 1972 of Urban System funds is \$710,832.

Federal Lands Highways—Federal lands highways are highways or portions of highways on public domain, Indian reservations, or other federal reservations. These highways are eligible for public lands highway funds. There is no definite system of public lands highways nor is any annual allocation made to Oregon of these funds. Congress provided \$16,000,000 for fiscal year 1971 and \$16,000,000 for fiscal year 1972, which is apportioned on a basis of need. Oregon has applications in for \$1,500,000 of these funds. Construction work financed by these funds is contracted and supervised by the State Highway Commission. The federal government

pays 100% of the contract costs, up to the limitation of the apportionment, on those portions of the project within public lands boundaries. So far public lands highway funds have all been expended on either primary or



Construction equipment on the 4 laning project along the Columbia River Highway US 30 north of Portland

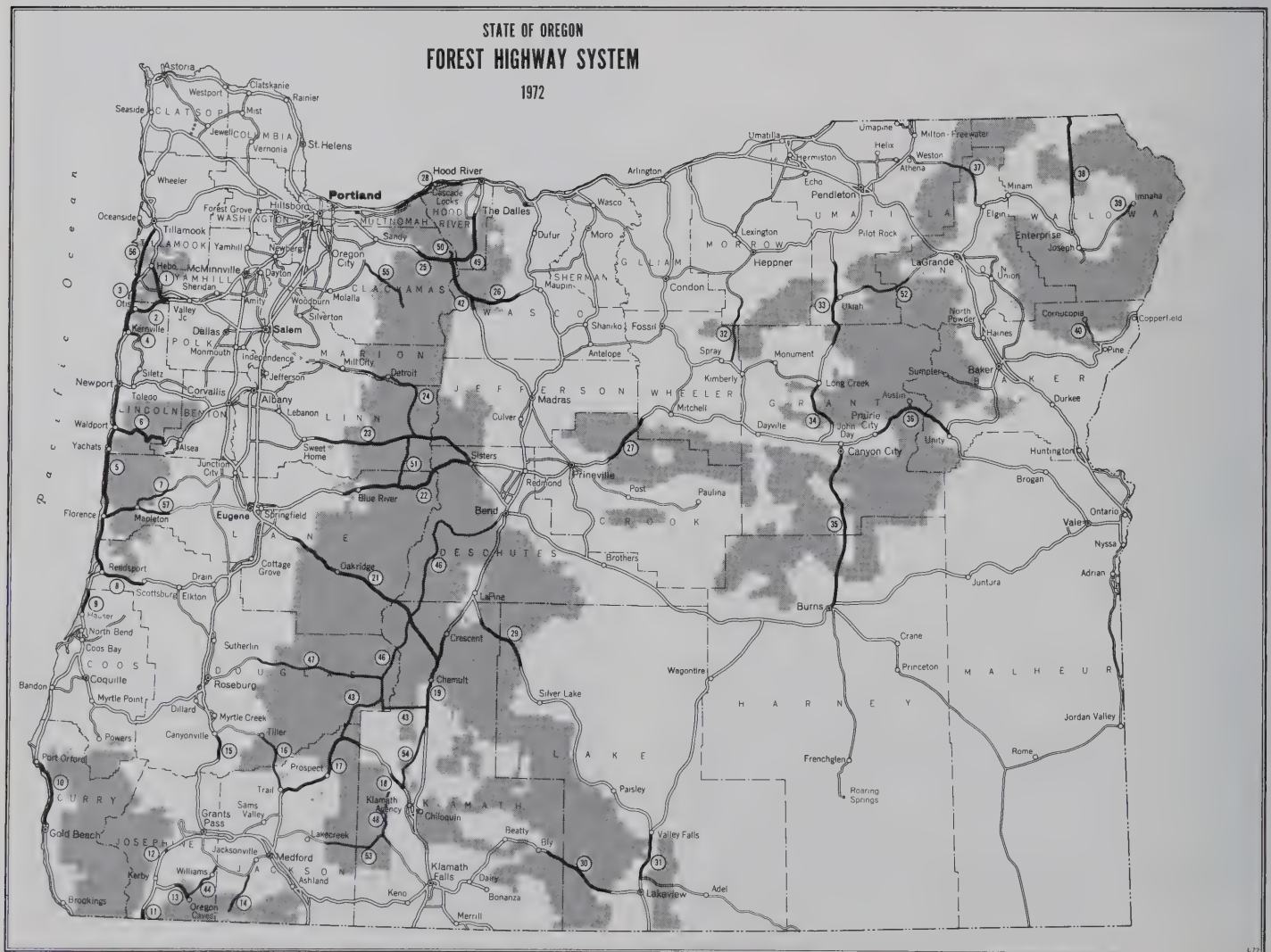
secondary highways. While some of the roads are throughways, none are freeways or expressways.

Federal Forest Highways—This system of roadways is composed of such main highways within or near national forests as have been designated by the Federal Forest Service, the Federal Highway Administration and the State Highway Commission for improvement with federal forest highway funds. Construction work financed with these funds is contracted and supervised by the Federal Highway Administration, with the state having a voice in the selection of projects, matters of location and standards of construction. For the past few years, Oregon has received approximately \$4,500,000 per year of these funds. As portions of the forest highway system may be coincident with Interstate, primary or secondary highways, they are constructed to the standard of the particular system of which they are a part.

OTHER FEDERAL PROGRAMS

TOPICS Program—The expenditure of federal funds for an urban TOPICS (Traffic Operations Program to Increase Capacity and Safety) program was authorized by Section 10 of the Federal-Aid Highway Act of 1968. This program allows federal-aid financing of urban projects which will increase roadway capacity and provide for safer vehicular traffic on certain streets in cities of 5,000 population or more, provided required overall traffic planning studies have been made.

Federal regulations specify that TOPICS projects will be financed with 63% federal funds and 37% matching funds. By local agreement, the matching funds are half state and half city money. Oregon received \$831,248 TOPICS funds for fiscal year 1972.



Federal-Aid for Highway Beautification—The Highway Beautification Act of 1965 was established to provide (1) control of outdoor advertising along Interstate and primary highways, (2) Control of junkyards along Interstate and primary highways, and (3) landscaping and scenic enhancement on the federal-aid system.

Funds for control of advertising and junkyards are provided 75% by the federal government and 25% by the state. If control of advertising and junkyards in accordance with the law is not carried out, the federal law provides for a 10% penalty of regular federal-aid highway funds. Oregon laws were amended to provide the authority and means to fulfill the federal requirements.

Funds for landscaping, scenic enhancement and roadside development, including acquisition of strips of land adjacent to right-of-way of federal-aid highways, require no matching on the part of the state.



Cedar Hills Interchange on the Sunset Highway US 26 west of Portland



Pendleton bypass on the Old Oregon Trail I-80N

Economic Growth Center Development Highways—This program includes projects on the Federal-Aid Primary system to serve and promote the social and economic development of rural communities and surrounding areas, encourage the location of business and industry in rural areas, facilitate the mobility of labor in sparsely populated areas, and provide rural citizens with an improved highway system. Federal funds may

be authorized for up to 100% of the cost of preliminary engineering and economic surveys necessary for the planning and design of development highways and up to 20% additional funds over the normal matching ratio for the Federal-Aid Primary system. This would make the matching ratio in Oregon approximately 80% Federal - 20% State. \$1,566,000 for fiscal years 1972 and 1973 has been allocated to Oregon.

Special Bridge Replacement Program—The bridge replacement program was established to replace bridges of significant importance that have become unsafe or obsolete. An inventory of all bridges on the federal-aid systems have been made and classified as to their serviceability, safety and essentiality for public use. Based on this classification, structures are assigned a priority level for replacement. The first bridge replacement project under this program in Oregon is the Snake River Bridge east of Adrian. Federal funds allocated to Oregon for fiscal year 1972 for the bridge replacement program is \$600,000. The matching ratio is 75% federal and 25% state funds.

HIGHWAY BENEFITS AND



Trillium Lake and Mt. Hood

MISCELLANEOUS ACTIVITIES



Deschutes River with Three Sisters in background

INTERSTATE HIGHWAY BENEFITS

The final cost of the nation-wide Interstate Highway System is estimated at \$70 billion. Benefits accruing to interstate travelers are even higher at an estimated \$107 billion during the 1956-1979 construction period. This savings is on equipment and safety features without allowing value of driver and passenger time. A breakdown indicates the reduction in stops and starts, slowdowns and accelerations, etc. is reflected in savings of fuel and oil consumption, less tire wear and lower vehicle maintenance amounting to \$45.8 billion. The added safety features of interstate highways reduces the accident rate which results in less damage costs and medical expenses amounting to \$15.8 billion. Reduced travel time for commercial carriers adds up to another \$45.8 billion. These are only the direct benefits received by highway users.

Studies indicate that indirect benefits to industry, central business districts and residential areas are considerable. Highways influence the growth of the economy by improving mobility for economic, social and recreational activities. In 1961 a study of residential subdivisions built adjacent to the I-5 and I-80N freeways near Portland indicated a tendency for construction of higher priced, custom-built houses. The freeway

provided a commanding view and acted as a buffer against undesirable encroachment. An owner's attitude survey was made of six subdivisions including 187 homes, 32 houses were vacant or the owners were not available at the time of interview, the remaining 155 owners were interviewed. The following table is a summary of the results.

	YES	NO
Were you apprehensive of the freeway before buying?	18	137
Was the price reduced because of the freeway?	0	155
Were similar homes available farther from the freeway?	134	21
Would you buy here or in a similar location again?	140	15
Do you now consider the freeway an advantage?	128	27

VARIED ACTIVITIES OF OREGON HIGHWAY COMMISSION

The most well known and assumed responsibilities of the Highway Commission are the construction and maintenance of highways. In addition to these primary responsibilities the commission is assigned various tasks, some are required by Federal Law and others are by state legislative actions. Some of the more recent changes are summarized below and detailed in Section Reports. Other activities such as Travel Information and Parks and Recreation are covered by the Section Reports.

FOOTPATHS AND BICYCLE TRAILS

In the 1971 Regular Session of the Oregon Legislative Assembly, House Bill 1700, commonly known as the Bicycle Bill, was passed. This law provides that not less than 1% of the funds received by the Commission or by any city or county from the State Highway Fund shall be expended for the establishment of footpaths and bicycle trails.



Alder Creek-Wildwood Section of the Mt. Hood Highway US 26. A Forest Highway project under the supervision of the Federal Highway Administration.



Ontario Safety Rest Area under construction along the Old Oregon Trail I-80N just north of the Idaho State Line along the Snake River

Such footpaths and bicycle trails provide opportunities to complement present modes of transportation by linking communities, schools, parks and places of work while reducing congestion in areas and conflicts between various forms of travel occurring on some streets and highways. Bicycle and pedestrian pathway establishment creates additional commuting and recreation opportunities within urban, suburban, and rural areas.

Expenditures by the Highway Commission for establishment of footpaths and bicycle trails during the 1972-73 biennium is estimated to be \$3,800,000. Counties and cities will spend another estimated \$700,000.

MOTORIST INFORMATION ACT OF 1971

This State Law provides for control of outdoor advertising in compliance with Federal Laws and Regulations and establishes a Travel

Information Council consisting of 11 members, which includes the Highway Commission Chairman or his designee. The council will regulate the size, shape, color, lighting, manner of display and lettering of motorist informational signs.

The Commission is directed to establish and maintain official tourist information centers near principal points of entry to the state or at appropriate locations.

The law provides for removal of existing, nonconforming billboards after just compensation is made to the owner.

The Travel Information Council was provided with \$5,000 from the highway fund for expenses incurred during the 1972-73 biennium.

State and federal funds amounting to \$1,200,000 will be used by the Commission for acquisition and removal of outdoor advertising signs.

OREGON RECREATIONAL TRAILS SYSTEM ACT

The Oregon Recreational Trails System passed by the 1971 Legislature is to provide trails for hiking, horseback riding and bicycle paths in and around urban areas and provide access to recreational and scenic areas.

The act also establishes the Oregon Recreation Trails Advisory Council consisting of 8 members. The council will establish policies relating to the designating, establishment and administration of trails.

OREGON SCENIC WATERWAYS SYSTEM

The Scenic Waterways bill was adopted at the general election on November 3, 1970. The bill preserves free-flowing rivers or segments of rivers and all land within one-fourth of a mile of the river on both sides. The rivers selected possess

outstanding scenic, fish, wildlife, geological, botanical, historic, archeologic and recreation values for both present and future benefits to the public. The rivers designated scenic waterways are segments of the Rogue, Illinois, Deschutes, Owyhee and John Day Rivers, and the entire length of the Minam River. The Highway Commission has the right to control future land use in the protected areas. This right does not affect the land use that was exercised prior to the effective date of the law.

WILLAMETTE RIVER PARK SYSTEM

This park system was adopted at the 1967 Legislative Assembly to establish a park system along the Willamette River from the Dexter Reservoir in Lane County to the Columbia River. The Highway Commission is responsible for administering the program and to carry out the plans and policies of the Willamette River Park System Committee.

OREGON BEACHES

Beach Laws adopted by the 1967 and 1969 legislatures are administered by the Highway Commission, these laws designate Oregon's beaches as recreation areas and permit the beaches to be used by all persons rather than be controlled by private ownership.

Rules and regulations controlling use of motor vehicles were established by the commission in 1970. In 1970 and 1971, college students were used for beach patrol during the summer months to enforce the regulations and render aid to people in distress along the beaches.

Presently a system of beach access and parking areas are being constructed to give easy access to all beaches along the Oregon coastline.

MISCELLANEOUS APPROPRIATIONS

Miscellaneous appropriations in the amount of \$1,500,000 from highway funds for the 1972-73 biennium are distributed to various state and local governments. A list of these appropriations are:

Local governments will share \$300,000 for construction and improvements of marine parks and facilities. These grants are subject to approval by the Marine Board.

The Oregon Historical Society was allocated \$25,000 to be used exclusively for acquisition, development, and maintenance of historic places.

An appropriation of \$95,478 was made to the Board of Health to be expended on the Implied Consent and Impaired Drivers programs.

The State Forestry Department was appropriated \$113,296 for expenses in the development and improvement of recreational and scenic areas.

Expenses for the Columbia River Gorge Commission is estimated at \$5,019.

Highway funds in the amount of \$387,000 is appropriated for the biennial budget of the Department of Transportation.

The balance of the miscellaneous appropriations is for the Police Network System, \$547,000 and Public Museums, \$55,000. These programs are continued from the previous biennium.



Willamette Falls Safety Rest Area on Interstate 205 overlooking Oregon City

SECTION

ACCOUNTING SECTION

COUNTY AND
CITY SECTION

BRIDGE SECTION

DESIGN SECTION

COMMISSION
SECRETARY

LOCATION
SECTION

CONSTRUCTION
SECTION

MAINTENANCE
SECTION

REPORTS

**MATERIALS AND
RESEARCH SECTION**

**PARKS AND
RECREATION SECTION**

**PERSONNEL
SECTION**

PUBLIC AFFAIRS

**PLANNING
SECTION**

**RIGHT OF WAY
SECTION**

**PROGRAMING
SECTION**

**TRAFFIC ENGINEERING
SECTION**

ACCOUNTING SECTION

The Accounting Section is responsible for the financial system of the Highway Division and provides for the accumulation and reporting of cost information that is responsive to all pertinent state and federal statutory and regulatory requirements. Equally essential is the responsibility of the Accounting Section to provide cost information responsive to the needs of management at all levels.

ACCOUNTING ADMINISTRATION

The chief administrative officer is the Controller, who is appointed by the Highway Commission. Included in his staff are two assistant controllers and the director of data processing who exercise supervision over the various operating units of the section. This unit also includes two secretaries who handle, coordinate, and file a large volume of correspondence and related data. Administrative responsibilities of the Controller include, but are not limited to: budgeting, purchasing, general ledgers, inventory control, computer services, payroll, equipment administration, revenues, external auditing, cash forecasting, federal-aid billings, debt service, and all disbursements. The Controller provides for both informational reports and control reports in his financial reporting to Highway Management. As the chief accounting officer for the Highway, the Controller directs his staff to assist management in the planning, direction, coordination, and control of operations. A related function is to maintain records and procedures which will adequately protect all interests of the State Highway Division. Currently under review is the development of an integrated business information system designed to provide a computer-oriented information and communications network which will integrate all of the separate operations into a disciplined system.

SYSTEMS AND RECORDS UNIT

The purpose of this unit is to act in a liaison capacity in aiding other Highway Sections to design principles and procedures for management accounting. These duties include helping to determine the responsibilities and objectives of the users, providing for the continuing study of



Sixes River Bridge along the Oregon Coast Highway US 101 in Curry County

measures for evaluating systems performance, assistance in the development of forms and records formatting and in the associated printing requirements. Work performed by this unit also includes budget development by coordinating the preparation of the biennial budget estimates.

PURCHASING UNIT

This unit is devoted to the procurement of materials, supplies, equipment, and nonpersonal services. Proper performance of the purchasing function is vital to the smooth operation of all other sections in the Highway organization. Successful operations are dependent on the procurement of proper equipment, materials, and supplies of proper quality, so that the flow of administrative, maintenance, and construction activities are not interrupted or impeded.

PAYROLL UNIT

This unit is responsible for the basic payroll for each pay period and maintains a record of the individual earnings. Payroll accounting also requires collection of federal and state taxes and is flexible in deducting for various insurance programs and other deductions which must be accounted for.

LEDGER UNIT

This unit is responsible for maintaining accounting data relating to the balance sheet

accounts, revenue accounts, highway investment and fixed asset accounts and expenditure control accounts. This activity receipts all cash items and makes deposits with the official depository. General accounting adjustments are supervised through this operation.

CONTROL UNIT

This unit is designed to provide uniform internal control so that all documents give evidence to all required conditions precedent to payment. The cost accounting function is an integral part of this unit as is the property control function. All accounting documents supporting disbursements are filed for future reference by this unit. Revenue control for parks is also handled by this unit.

BILLING AND AUDIT UNIT

This unit is responsible for federal-aid billings and the auditing of consultants, educational institutions, political subdivisions, parks,

right-of-way properties, railroads and public utilities.

EDP OPERATIONS UNIT

This unit is responsible for the actual operation of the computer, the maintenance of the EDP library and the input/output control. The keypunch operation is an integral phase of this unit.

EDP SYSTEMS AND PROGRAMING UNIT

This unit is responsible for the EDP application of system studies, feasibility studies, evaluation of new equipment, investigation of new applications or techniques, and the subsequent programing of the computer to obtain desired results.

EDP ENGINEERING UNIT

This unit has as its primary function the resolution of scientific engineering problems by utilization of computer techniques.

BRIDGE SECTION



McAlister Lane structure on the Old Oregon Trail I-80N near La Grande

The Bridge Section is responsible for design engineering on all highway bridges, grade separation structures, park and maintenance buildings, office buildings, highway signing and illumination projects, retaining walls and other

incidental highway structures.

Within the section the final contract plans are prepared prior to receiving bids for contract awards. Data is gathered in the field on soil and foundation conditions at the proposed structure site. The design engineers then proceed with the design of the structure after consultation with the architects who also form a necessary part of the section.

The architectural subsection furnishes sketches showing the aesthetic considerations to be achieved for each design alternate. The result is a structure that is engineered to carry the highway loading at the least possible cost and one whose appearance blends with and enhances the environment.

Construction engineering for bridges and incidental structures is under the direct supervision of regional engineers using a staff of resident engineers and inspectors especially trained to deal with the many problems of bridge construction. Liaison between bridge construction



Boeckman road crossing of the Pacific Highway I-5 in Clackamas County. This structure received an Award of Merit in 1971 for aesthetics in design from the American Institute of Steel Construction.

and design is maintained by the Bridge Field Engineer for Operations.

Due to special problems encountered in bridge design, the Bridge Section gives technical assistance to counties and cities on design and maintenance of bridges under their jurisdiction. This assistance may include conferences with local officials to discuss problems in bridge construction and the actual design, including final plans and specifications ready for receiving of bids. Field engineering, supervision, and inspection services are available at cost to local government agencies on contracts awarded by them.

The Bridge Section received several awards in 1971 for outstanding bridge designs. Awards of merit were received from the American Institute of Steel Construction for imaginative bridge

design in the creation of the nation's beautiful steel bridges for two structures in Clackamas County: the I-5 Undercrossing of Boeckman Road on the Pacific Highway (Highway Grade Separation Category), and the Willamette River (West Linn) Bridge on the East Portland Freeway (I-205) (Long Span Category).

An Award of Merit was received from the Prestressed Concrete Institute for excellence in architectural and engineering design using prestressed concrete in bridge construction for the Stafford Road Interchange on the Pacific Highway (I-5) in Washington County.

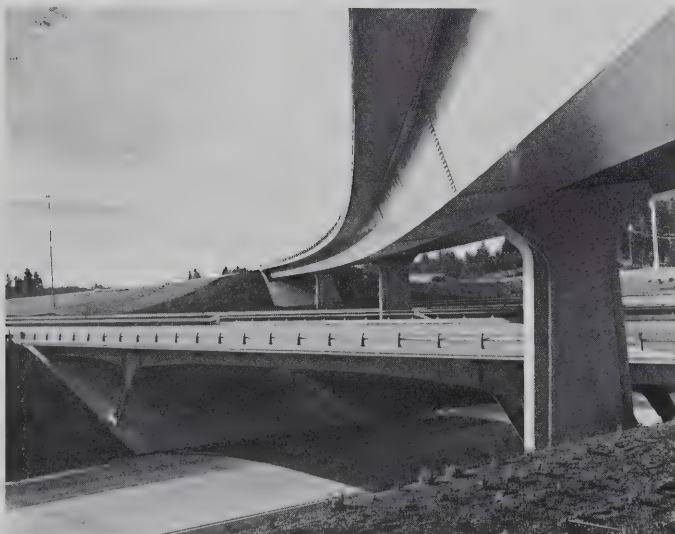
Major structure construction projects during the 1972-73 biennium are:

Pacific Highway (I-5)

Completion of the widening of Pacific Highway, I-5, to 6 lanes from near Tigard to the newly completed Hubbard Interchange involved construction of 7 new grade separation structures to span the widened highway. A contract now in progress to continue widening I-5 from the Hubbard Interchange south to the Woodburn Interchange will involve replacement of 2 undercrossing structures and widening of 4 existing overcrossing structures.

East Portland Freeway (I-205)

All work was completed on the first section of the East Portland Freeway, I-205, from its junction with Highway I-5 to Oregon City. This project involved 24 grade separation and stream-crossing structures, including the Willamette River (West Linn) Bridge at Oregon City. The



I-5, I-205 Interchange structures on the Pacific Highway in Washington County

I-5, I-205 interchange marked one of the first uses of high-mast illumination where lights mounted on 150-foot towers supply a more uniform glare-free distribution of light. Two additional projects including 9 structures are currently under contract extending Highway I-205 from Oregon City north to S. E. Causey Avenue.

During the biennium foundation exploration was completed and preparation of final design plans were started by consulting engineers for the Columbia River Bridge on I-205.

Eugene Spur (I-105)

A major contract has been awarded for the construction of the 1st Ave.-7th Ave. Viaduct on the Eugene-Springfield Highway, I-105. This structure will provide the connection of this bypass highway with Pacific Highway 99W and Eugene city streets. Several city streets have been closed to provide recreational and park facilities beneath and adjacent to the viaduct.

Columbia River Highway (I-80N)

Three contracts involving grading, paving, signing, illumination and 19 stream-crossing and

grade separation structures completed during this biennial period brought another 12.16 miles of Highway I-80N to freeway standards in Baker and Union Counties. An additional 10 contracts involving 66.4 miles of similar roadway construction, including 36 structures, are in progress on this highway in Baker, Union, Umatilla and Malheur Counties.

Stadium Freeway (I-405)

The major portions of work to complete the last link in the Stadium Freeway, I-405, the Fremont Bridge and its approaches, were placed under contract previous to this biennium. These contracts included the West Fremont Interchange, the superstructures for the main Willamette River crossing, and the East Fremont Interchange.

A contract for grading, paving, structures, signing and illumination on the west approach to make a ground-level connection to the proposed Industrial Freeway was awarded in the biennial period.

The Fremont Bridge with its east and west approaches will be the largest structure on the state highway system providing 16 traffic



Overcrossing of Blankenship Road, twin structures on the East Portland Freeway, I-205, near West Linn in Clackamas County

lane-miles of structure which would equal a 2-lane bridge 8 miles in length. The total contract cost of this complex is over \$71,000,000.

Other projects in the state involving major structures included a new bridge over the Willamette River at Albany on the Albany-Corvallis Highway which was completed in this biennium. Work was begun on 2 structures on the Oregon Coast Highway (US101): the Siletz River Bridge at Kernville in Lincoln County and the Chetco River Bridge at

Brookings in Curry County.

Completion of the concrete lining of the Knowles Creek Tunnel on the Florence-Eugene Highway in Lane County brought the tunnel passage up to modern safety standards.

Four Tourist Information Center Buildings were completed or placed under contract during the biennium at Ontario on the Idaho border, and at Brookings, Gateway, and Midland which are on various highways near the California border.

COMMISSION SECRETARY

The Highway Commission Secretary is responsible for keeping records of all Commission meetings, agreements, contracts and other business of the Commission.

The Secretary's office is divided into four principal divisions: (1) the main office staff, composed of the Secretary, the Assistant Secretary, and three stenographers; (2) the general files, operated by a chief file clerk and two assistants; (3) the technical library, operated by the librarian, and (4) the mailing section, handled by a chief mail clerk and two assistants.

The Secretary determines the prequalification of contractors with respect to the size and type of projects upon which they may bid. The size of project each contractor is capable of handling satisfactorily is determined through investigation by the Secretary's office. Those contractors who meet the basic requirements are thus qualified to bid on all contracts within the specified size and limitations.

During the biennium, approximately 950 contractors were prequalified, and approximately 6,000 requests for contract plans were checked for prequalification.

When a contract is awarded by the Commission, the Secretary forwards contract forms to the contractor for execution. After construction begins, claims for labor and materials against the contract are recorded and the contractors and their surety companies are notified of such claims.



Interstate Highway Safety Improvement Project on the Pacific Highway, I-5 north of Grants Pass

Another important function of the Secretary's office is to advertise and record public hearings which are required in regard to highways, beach encroachments, scenic waterways and those hearings required by the 1971 Administrative Procedures Act. Transcripts of the hearings are prepared and distributed. New federal and state regulations have increased the need for public hearings. Hearings held in 1970 were 36 and in 1971 were 26.

GENERAL FILES

The general files for Commission and administrative records date back to 1917, the beginning of the Highway Commission, and as far

back as 1912 under the previous organization. Most of these records are filed on open-shelf filing, using a system of filing by subject.

During the biennium, over 111,000 files were assembled and more than 16,000 requests for information from the files were filled. To avoid overloading the files with unnecessary material, an approved program for disposal of surplus or unneeded records is currently in operation. Since 1958 approximately 150 file drawers of records have been eliminated. Approximately 600 duplicate copies are separated and disposed of each week.

TECHNICAL LIBRARY

The technical library maintains copies of books and magazines covering all phases of engineering and related subjects, as well as reference material for secretaries and clerical employees. Library service is available to all Highway Division employees throughout the state.

Interlibrary loan service with most libraries throughout the United States is made available by the technical library. If the location of an item being requested is unknown, the request is forwarded to the State Library for handling.

By request, an individual's name is placed on a periodical routing list so that he may regularly receive designated periodicals. A separate card file is kept on articles by Highway personnel and

articles relating to the Highway Division.

A bimonthly list of new books, pamphlets and documents is compiled and distributed throughout the state to Highway employees. The library contains approximately 8,250 books and periodicals. During the biennium 9,100 loans were made.

MAILING SECTION

All Salem Highway Building mail is handled by the mailing section. The annual volume of incoming and outgoing mail handled by this section has increased from approximately 860,000 pieces in 1963 to 1,080,000 pieces in 1971.

During the biennium \$117,000 was expended for meter postage, plus \$13,680 for bulk mail. Sorting by zip code is necessary for bulk mail and additional help is required for about six months; however a net saving of \$7,675 was made by this method compared with regular postage. In November 1969, United Parcel Service facilities were utilized for package mail. During 1970 and 1971 approximately 10,400 packages were sent by United Parcel Service resulting in a saving of approximately \$4,160 as compared with Parcel Post rates.

Approximately 7,700 addressograph plates were maintained for addressing mailings to contractors, suppliers, Highway Division personnel, and others. During the biennium 544,241 pieces of mail were machine addressed.

CONSTRUCTION SECTION

The Construction Section is responsible for the supervision of all construction contracts (excluding field supervision of structure contracts) from time of contract award until the contract work has been completed and the final estimate submitted. In addition, liaison is maintained with all other departments to assist in future planning of new construction.

CONSTRUCTION ADMINISTRATION

Construction Administration includes the Construction Engineer and his staff who provide supervision of all matters pertaining to road



Interstate construction through Ladd Canyon in Union County on the Old Oregon Trail, I-80N

construction through the region offices and the resident engineers. This unit also includes the secretarial pool; handling, coordinating and filing a large volume of correspondence and related matters; and maintaining Construction Section records relative to personnel, property control and project status. In addition, all change orders on contract work are reviewed and approved; approval of the Federal Highway Administration is obtained on those projects having federal participation; pertinent records on all contracts are reviewed and filed; various monthly and quarterly reports on construction activities are prepared; and frequent field inspections are made to insure proper conformance to specifications.

The Construction Section is further subdivided into the units following. Each unit is headed by a staff assistant who is responsible to the Construction Engineer and his staff for the operation of their phase of work.

UTILITIES LIAISON

The Utilities Liaison Unit provides the necessary liaison work to secure removal and adjustment of public and private utility facilities which conflict with highway construction. This unit is also responsible for negotiations with railroads affected by construction projects and



Interstate highway construction near Weatherby on the Old Oregon Trail, I-80N

initiating applications to the Public Utility Commissioner for grade crossings required by highway construction.

Many of today's sophisticated utility services, such as telephone coaxial cables, long line petroleum product transmission pipes, and electric power transmission lines, cannot be readily adjusted. In some instances, special equipment and materials are required which can be secured only by special order. This unit arranges for the adjustment of such facilities as required by highway construction.

In order to relocate the utilities as expeditiously as possible, close contact with utility companies is maintained by field personnel on a highway project. Fieldmen are assigned to headquarters in Portland, Salem, Roseburg and La Grande.

COST ENGINEERING

The Cost Engineering Unit furnishes estimated unit prices to all sections of the Highway Division for estimating cost of future construction work. Cost studies are made of actual contractor operations to determine current prices for highway construction items.

The Cost Unit prepares and distributes several Highway Division official documents. The "Oregon Highway Construction Cost Index" is published quarterly. This report includes an



Salmon River Bridge on the Mount Hood Highway, US26

analysis of the unit bid prices on the index items for contracts awarded during the quarter. Periodically, the equipment rental rate book, "Rental Rates for Equipment (Without Operators) Used on Force Account Work", is revised. Before publication, these rates are submitted to the Oregon Columbia Chapter of the Associated General Contractors of America for review.

EQUAL EMPLOYMENT OPPORTUNITY

Early in 1969, federal directives were issued setting forth guidelines for the "Equal Opportunity Prequalification Statement and Affirmative Action Program". All contract activity is coordinated with the Equal Employment Opportunity Engineer to assure that equal employment opportunity is practiced by the Highway Division and its contractors.

Regular contacts are maintained with potential minority employee referral sources, such as schools, colleges, unions, community action groups and the State Department of Employment. Contractors are referred to these potential sources of minority employees.

Contractors are required to furnish monthly employment statistics to the resident engineer assigned to each construction project. These data include employee classifications by job category and ethnic group. Investigations are made to determine compliance with provisions of Executive Order 11246 and federal regulations.

CONSTRUCTION TESTING

The Field Testing Unit supervises a state-wide training program in order to maintain a competent and adequately trained force of field inspection personnel. Formal training courses are provided each year for field engineers and their inspectors in "on the job" sampling and testing of materials and techniques for inspection of work performed in the fields of soils, surfacing, paving and other related highway work. Upon completion of any one of these training courses, personnel are examined and certified as to their proficiency in that particular field of inspection; 130 to 200 engineers and inspectors attend these schools and are certified in one or more fields of inspection each year.

In December, 1971, purchase was made of

twelve Nuclear Density- Moisture Testers and thirty-three inspections and key personnel were trained in their use. The use of these testing machines greatly reduces the time required in making density and compaction tests on subgrade soils, bases and asphalt concrete mixtures thereby speeding up correction of substandard work and ensuring a better finished product.

A continuing liaison between the Construction Section and field engineering offices is maintained to coordinate and standardize field procedures, methods and controls pertaining to inspection, testing and documentation of materials incorporated into highway construction.



Relocation of the Clackamas Highway at Estacada

This unit works with the Central Laboratory and the specifications unit of the Programing Section in the review and development of project specifications. Upon completion of a highway construction project, the final "field job control" documentation for specification compliance is reviewed and recommendations made as to acceptance, rejection and/or penalties for nonconformance with specification requirements.

COUNTY AND CITY SECTION

In general, the County and City Section functions as liaison between the Highway Division, the 36 counties, and the 229 incorporated cities within the state. In addition, the County and City Section has been approved by the Federal Highway Administration as a "secondary road unit" as required in Section 2 of the Federal Aid Road Act of 1950. This act provides that each state shall establish an administrative and engineering unit functioning within the State Highway Division organization and charged primarily with the duty of establishing and maintaining cooperation between the Highway Division and the counties in the selection of extensions to the federal-aid secondary system, in the selection of projects and determination of the specifications for the improvement of projects, and in the supervision of the construction and maintenance of such projects. The County and City Section is responsible for the following programs or duties.

COUNTY FEDERAL-AID SECONDARY PROGRAM

The federal-aid secondary system is presently comprised of approximately 3,520 miles of state highways and approximately 5,032 miles of county roads. Only highways or roads designated as part of this system are eligible for projects partially financed from federal-aid secondary funds as appropriated by Congress. The system is subject to revision as agreed upon by the state, counties and federal government. Federal law and regulation require cooperation and agreement between the Highway Division and the various county courts in all matters pertaining to system revision, selection of projects for construction, and determination of specifications for these projects. The County and City Section maintains complete records of the approved system and carries on negotiations with counties as required to work out state-county agreement on system revisions, on the selection of projects, and on the determination of specifications.

Beginning with fiscal year 1954, federal regulation requires that 50 percent of federal-aid secondary funds be spent on the county road portion of the federal-aid secondary system. An allocation of funds is made to the individual

counties based on the formula developed by the Association of Oregon Counties and approved by the State Highway Commission. This formula provides that 25 percent of the funds available to the counties shall be divided equally among the counties and that the remaining 75 percent of these funds shall be divided 80 percent according to rural population, and 20 percent according to county road mileage.



Highway reconstruction near Rhododendron on the Mount Hood Highway, US26

The State Highway Commission pays the preliminary engineering costs and the counties pay the right-of-way and material source costs. These costs are over and above the state and county participation in federal-aid construction projects which permit all available federal funds to be applied toward construction costs. This results in participation of total construction costs of approximately 60 percent federal funds, 20 percent state funds, and 20 percent county funds.

From July 1, 1970 to June 30, 1972, 45 projects were programed for construction under the supervision of the State Highway Division on county road FAS routes lying outside the state highway primary and secondary systems. These projects were constructed cooperatively by the State Highway Division and the respective counties of Oregon. The projects, amounting to

approximately \$13,500,000, were constructed in 25 of the 36 counties. The total work accomplished on these projects included 41.5 miles of base, surfacing and grading; 39.1 miles of bituminous surface paving; 27 structures; and 7 railroad signalization projects. In addition, two emergency relief projects in two counties amounting to \$100,000, consisting of 0.28 mile of grading and paving, were programed.

CITY ALLOCATION OF HIGHWAY REVENUES

Under Oregon law, incorporated cities receive 12 percent of motor vehicle revenue to be used for city street improvements. From this appropriation, \$250,000 is withdrawn each year and set up in a separate account to be administered by the Commission. The remainder of the appropriation is allocated to the cities. Each city receives an amount equal to the ratio that its population bears to the total population of all incorporated cities. Population is determined by the latest official enumeration of the State Board of Education's Center for Population Research and Census.

The \$250,000 withheld is used for the betterment of city streets not on any state highway system but which are subjected to unusually heavy usage and wear in cities having less than 5,000 population. The maximum amount a city may receive from this fund in any one year is \$25,000. If a project exceeds this limit, the city pays all additional costs.

From July 1, 1970 to June 30, 1972, projects were programed for 24 city streets in the following cities: Burns, Chiloquin, Clatskanie, Falls City, Haines, Hermiston, Heppner, Island City, Jefferson, John Day, Jordan Valley, Lakeview, Milton-Freewater, Mt. Angel, North Powder, Philomath, Powers, Redmond, Scio, Sheridan, Sherwood, Silverton, Stayton, and Veneta. These projects include construction of one bridge, railroad protection for two crossings, 2.73 miles of grading, 4.17 miles of paving, and 4.00 miles of curb construction. Programed expenditures for city allotment fund projects during this period amounted to \$901,000.

MARINE FACILITIES PROGRAM

Chapter 662, Oregon Laws 1969, extended the legislation that provides for grants of funds by

the Highway Commission from the State Highway Fund to various local governmental units for construction and improvement of marine parks and facilities. During fiscal year 1970, \$128,863 of highway funds designated for the Marine Facilities program were expended. These funds were expended on 32 projects in 27 counties and were matched on a 50-50 basis with local funds.

The Highway Commission at its meeting on July 27, 1971, approved the transfer of \$300,000 to the Marine Board in quarterly amounts of \$37,500 for the 1972-73 biennium. This action was the result of passage of Senate Bill 154 by the 1971 Legislature, and the remarks incorporated into the Joint Ways and Means Committee report which included a statement that if the above-mentioned Senate Bill were enacted, the Highway Division should not make marine grants without the approval of the State Marine Board.



Ontario Safety Rest Area near the Idaho State Line on I-80N

MISCELLANEOUS AGREEMENTS AND RESOLUTIONS

Pursuant to various state and federal regulations, the County and City Section obtains and compiles basic data for use in the preparation of cooperative construction agreements, FAS-county construction agreements, city allotment, TOPICS and urban system agreements, abandonment resolutions or



Eagle Creek Bridge on the Clackamas Highway, ORE224
southeast of Estacada

agreements, and throughway agreements.

Terms of the agreements are negotiated with the various governmental units, signatures obtained and the documents presented to the Highway Commission for their approval. Agreements must be consummated prior to award of contracts for construction.

ABANDONMENT OF OLD HIGHWAYS

Determination is made for the proper disposition of sections of old highway to be abandoned due to relocation or realignment resulting from construction on new right-of-way.

If the old alignment is needed for service to the communities or the people living in the area, the highway is maintained by the Highway Commission at state expense, or by the respective county or city, or by the state, city, and/or county on terms as may be agreed upon. When the old alignment is no longer needed to serve the communities or people living in the area, it is abandoned to abutting property owners. The County and City Section gathers data; prepares the agreements, with necessary maps, and submits them to the respective city or county officials and the Highway Commission for execution; and completes the disposition of the old highway alignment through the appropriate resolutions for adoption by the Highway Commission.

The abandonment of old highway and

right-of-way no longer needed for highway purposes is proceeding on a continuing basis. Relinquishment of deeded right-of-way is being conveyed to the counties and/or cities on right-of-way not required for further state highway use.

PUBLIC HEARINGS

Prior to acquisition of rights-of-way for new construction projects or abandonment of old alignments through incorporated cities, it is necessary to notify the city of the intent of the Highway Commission. The County and City Section gathers the necessary field data and, working with the Commission Secretary, notifies the city officials and local news media of the action contemplated. After such notification, a public hearing is scheduled if any requests for hearings or objections are made to the proposed action. At these public hearings, persons who favor or oppose the contemplated action are given an opportunity to be heard.

TOPICS PROGRAM

The Federal Aid Highway Act of 1968 established the Traffic Operations Program to Increase Capacity and Safety (TOPICS) of streets and highways within urban areas. The basic idea of TOPICS is to promote the maximum use of the existing street system without involving major construction or reconstruction.

The total amount of federal funds allocated for this program to date is approximately \$5 million. When matched with state and city funds, this will provide for the implementation of approximately \$8.3 million in traffic improvement projects.

There are 29 urban areas within the State of Oregon containing 39 cities which are eligible for allocation of TOPICS funds. Thirty-eight of these cities have at least one approved TOPICS project.

The various projects consist of traffic studies, street widening, traffic signal installations, traffic signal upgrading, bridge construction, intersection channelization, and railroad crossing protection. Eighty TOPICS projects have been approved by the Highway Commission to date. Of these projects, forty-three are either completed or under contract.

Twenty-two studies to produce an Areawide TOPICS Plan for the urban area involved are either under way or have been completed. The estimated cost to complete these studies is \$160,000.

URBAN SYSTEM PROGRAM

The Federal Aid Highway Act of 1970 authorized the establishment of the Federal Aid Urban System Program in urbanized areas. The County and City Section, during the biennium, assisted local officials in selecting urban system routes in Oregon's three urbanized areas. In the Portland, Salem, and Eugene urbanized areas, 136 miles of urban system routes were approved.

These urban system routes are among the most heavily traveled elements of the urban highway networks.

Federal urban system funds amounting to \$1,590,000 were allocated to the three areas for the first two fiscal years of the program. Federal participation is approximately 60 percent of total project costs. The remaining 40 percent matching funds are contributed equally by the state and local agency. Total federal, state, and local funds result in approximately \$2,650,000 available for improvements on the urban system. Each urbanized area has inaugurated projects to use its share of the initial urban system funds and is planning projects for future funds.

DESIGN SECTION



Interstate Highway construction north of Lime on the Old Oregon Trail, I-80N

Among the major responsibilities of the Design Section are the preparation of urban location project designs and estimates, the layout of all interchanges and channelizations, designing and estimating all landscaping work, designing and estimating safety rest area projects, preparing all right-of-way descriptions and preparing final contract plans for highway projects.

New to highway designing is the requirement to construct footpaths and bicycle trails where appropriate.

DESIGN OFFICE UNIT

The Design Office Unit performs the administrative tasks necessary for the efficient operation of the division. This unit includes the secretarial pool that handles the large volume of general correspondence; and maintains records relative to personnel, property control, departmental files and project status. The section's administrative budget is prepared by this unit and records are kept throughout the year to ensure operation of the division is in line with the established budget. Much of the clerical work involved in distributing plans and specifications is done here. Preliminary plans prepared in the Final Design Unit are reviewed. Applications are made to the Division of State Lands for removal/fill permits for construction projects.

PRELIMINARY DESIGN UNIT

The Preliminary Design Unit is responsible for route selection, design, preparation of final layout plans in all urban areas, and for design of interchanges and traffic channelization in rural areas. These duties include study of existing origin-destination surveys as supplied by the Traffic Section, the study of congestion in the area to be served, the operation and design of facilities to eliminate such congestion, the preparation of reports, and the assembly of data for design and corridor hearings necessary to implement these plans. Preliminary plans for

route selection through urban areas are prepared from photogrammetric maps compiled from aerial photographs. Generally, no fieldwork is necessary until the final layout plan has been selected, public hearings held, and agreements reached with the local government involved.

RIGHT OF WAY DESCRIPTION UNIT

This unit prepares legal descriptions which are furnished to the Right of Way Section covering all property to be acquired or sold by the Highway Division. The descriptions are recorded on magnetic tape for instant replay on the required legal and right of way documents, thus eliminating the possibility of errors and saving typing and proofreading time.

Right of Way maps are prepared which show all pertinent data relative to the highway survey and the properties involved. Upon completion of a project, reproducible copies of these maps, which indicate the monumented survey and right of way data, are filed in the county records, as required by law.

LANDSCAPE UNIT

The Landscape Unit is responsible for the design and preparation of plans for all roadside improvement projects, preparation of contour grading plans of major interchanges, the design of safety rest areas and information centers, and the placement of historic markers.

A ten-year development program is under way to update the facilities in existing safety rest area sites.

The Landscape Unit furnishes technical inspection on contracts for landscape projects. This includes quality of plants, their placement, the preparation of ground, and planting operation.

Studies are made on the use of functional plantings for screening and traffic guidance and to determine the location and scope of necessary erosion control work.

This unit administers the acquisition and development of scenic strips and control of junkyards as established under the Federal Highway Beautification Act of 1965.

FINAL DESIGN UNIT

The principal responsibility of this unit is the final design and preparation of plans for highway construction. Final plans are drawn after a complete review of construction features to assure adequate, economical design. Critical details are brought to the attention of the Specifications Engineer for inclusion in the special provisions.

Other responsibilities of this unit include: (1) development of design standards; (2) provide liaison between the State Fish and Game Commissions and the Highway Division to assure requirements are met for protection of the ecology surrounding highway construction projects; (3) standardization of construction design details are incorporated in standard drawings for assembling with the contract plans. These standard drawings are a major factor in producing contract plans within a minimum time.

The unit underwent a reorganization to form design teams. Under this system a team can operate more efficiently by performing the design function on several projects at once, each designer working on items of design according to his ability. By working closely with and under the supervision of more experienced designers, the design team concept is useful in training new designers.

The design teams of the unit perform the planning of construction features on highway



Sunset Highway, US26 and Beaverton-Tigard Highway Interchange in Washington County

projects; the drafting of the plans is done by the Technical Design Team. These teams are very effective in establishing a high level of

achievement in both quality and quantity of work produced for the accelerated program of highway construction.

LOCATION SECTION

The Location Section, which was organized in October 1971 and approved as a section in February 1972, is under the direction of the Location Engineer. This section is responsible for scheduling and policy supervision of all highway location surveys throughout the state. Close liaison with the Regional offices, Bridge, Construction, Design, Parks and Recreation, Programing, Planning, Right of Way and Traffic Sections is maintained to assure that all elements of a survey project are considered. Data and records pertaining to highway location surveys are also maintained by this section.

The Location Section has the responsibility for including, where justified, bike routes in the location of highways. A statewide, long-range plan is being developed to provide a coordinated system of state-county-city bike routes.

Reconnaissance Unit

The Reconnaissance Unit develops studies on various alternate routes to determine the most logical route selection. The studies include comparative construction costs, environmental impact and various other factors which influence route selection. This unit also prepares exhibits and compiles data required for corridor hearings, reviews hearing testimony, and prepares reports for use by the Oregon State Highway Division and the Federal Highway Administration for corridor determination.

Other functions of this unit include maintaining liaison with federal representatives on all highway work conducted on the Forest Highway System.

Preliminary Studies and Review Unit

This unit prepares preliminary route locations on photogrammetric maps, compiles cost estimates and other preliminary plans related to location projects, reviews field location surveys and performs redesign work as required, and is responsible for preparing exhibits and compiling the necessary data for combination corridor-design and design hearings. Other functions of this unit



Reconstruction to Interstate Highway standards in progress on the Old Oregon Trail, I-80N north of Ontario

include liaison work with the Corps of Engineers and other similar agencies.

Hydraulics Unit

The Hydraulics Unit investigates and studies hydraulic characteristics of stream crossings and waterways. These studies are then used to make recommendations for sizing of culverts and bridges and design of erosion control features to ensure adequate surface and subsurface drainage for highways. The unit also keeps hydrological data published by governmental and private agencies and maintains contact with these agencies for data that may be used in their studies and investigations.

Photogrammetry Unit

This unit prepares maps and mosaics from aerial photography for highway planning, location

and design and also provides a continuing county and city mapping program.

Revised maps for 12 counties were published during the biennium. This was the largest number produced since the present method of mapping congested areas by use of annotated aerial photo mosaics was initiated. Most of these maps were printed in three colors. All western and central counties of the state, except for one county bordering the Columbia River, have been revised to these standards.

In addition, many of the maps of Oregon's 230 cities were revised to include changes and annexations resulting from growth of urban areas. Urban area maps for all cities over 5,000 population were also published.

The demand for aerial mosaics has increased due to the Willamette Greenway and the scenic waterways projects with approximately 2,100 miles of mosaics being produced. This included various location and reconnaissance projects.

Color aerial photography was found to be a viable medium for land use studies and mapping. Over 2,000 miles of color aerial photography were purchased and have proven to be a very helpful interpretative tool.

New electronic distance measuring equipment and electronic digitizing of photogrammetric cross-sections have almost doubled the production of aerial mapping. Approximately 67 miles of cross-sections were produced for use in design, slide correction and computing earthwork pay quantities.

Soils and Geology Unit

This unit has the responsibility of advising the Design, Construction, Location and Maintenance Sections on matters concerning soil and rock conditions, foundation and slope stability, landslide control, cut and fill slope design, soil drainage and counterbalances. Design of surfacing is made by this unit. Geologists advise and assist in locating and evaluating rock and gravel sources as well as locating water sources for rest areas, parks, and landscape plantings.

During this biennium, new trends in surfacing designs of treated base materials have been evaluated and incorporated into projects to a much greater extent than previously. Cement treated bases, particularly, have been adopted in several designs, providing some construction cost reduction and greatly improved performance of marginal rock materials. Lime treated subgrades have been used under several newly constructed pavements and found to improve the performance of the subgrade.

Work has been started again, after a suspension of several years due to lack of funds, to locate sources of pavement aggregates for future construction and maintenance needs. This work has become increasingly important because of zoning and land use restrictions required by law.

This unit also provides administrative supervision of a cooperative research project with the Federal Highway Administration and the Oregon State University. The purpose of the research is to develop data which may show that the application of the rational elastic layer theory for pavement design might take the place of the empirical stabilometer test method now used.



Salmon River Bridge on the Alder Creek-Wildwood Section of the Mount Hood Highway, US26

MAINTENANCE SECTION

The maintenance and operation of the state highway system is the responsibility of the

Maintenance Section. This responsibility includes routine maintenance activities which are combined



Snow removal equipment near Timberline Lodge on Mount Hood

with minor betterments to provide safe and unrestricted use of the highway system for the traveling public.

An integral part of the Maintenance Section is the Permit, Equipment, Electrical, Sign, and Radio Units.

Maintenance Organization

The Maintenance Engineer and his assistants exercise general supervision over all maintenance activities statewide. The state is divided into five geographical regions, each headed by a Regional Engineer who supervises maintenance and operation of the state highways within his region, as well as all location, construction and other activities relating to highways. The regions are divided into a total of 16 maintenance districts, each supervised by a District Engineer. Each District Engineer directs the maintenance and operation of the state highways within his district under the supervision of the Regional Engineer and the Maintenance Engineer.

Maintenance Activities During the Biennium

In January, 1971, and again in January, 1972, above normal amounts of precipitation were experienced in Western Oregon. A series of heavy storms followed by a sudden lifting of the

freezing level, caused rivers in Western Oregon to go on the rampage.

In 1971, the Willamette Highway was severed, and many other highways in Western Oregon were damaged and traffic restricted. Maintenance forces and private contractors spent \$500,000 on emergency repairs to promptly restore two-way traffic. An additional \$1,500,000 was required to complete repairs to the highway system. Under a Governor's declaration of an emergency, federal monies were made available for these repairs.

In the early part of January, 1972, heavy rains again caused extensive damage in Western Oregon. The counties of Clatsop, Lincoln and Tillamook were declared disaster areas by the Governor. Ten days later, heavy rains again swept the entire length of Western Oregon, raising many rivers above flood stage and again resulting in extensive damage to the highway system. Temporary repair costs are expected to be \$300,000, and permanent costs are expected to be \$1,900,000. All of Western Oregon was declared a disaster area and federal monies are expected to be made available for these repairs.

The heavy snow storms of the 1970-71 winter, second only to the winter of 1968-69, required extra plowing and sanding efforts by maintenance crews. Snow removal and sanding costs reached

\$6,400,000, representing 30% of the general maintenance budget. This expenditure compared to snow removal and sanding costs of \$7,400,000 during the 1968-69 winter season and a more normal \$3,600,000 for the 1967-68 winter.

Surface maintenance continued to be a big expenditure, as \$13,200,000 was expended for surface repairs during the 1970 and 1971 paving seasons. These repairs included placing 1,023,000 tons of asphaltic concrete patching, oiling on bituminous surfaces, and the repair of joints and cracks in concrete pavements. The utilization of state highways by the public is taking its toll on the highways. The vehicle miles traveled on the state highways are projected to be 8,762,700,000, and the ton-miles moved on the highways is projected to be 35,839,400. These measurements of the use of Oregon's highways are increasing in excess of 6% each year with a corresponding increase in pavement repairs.

The Maintenance Section completed an objective rating of the surface condition on 6,500 miles of asphalt concrete highways in the state system. The surface condition rating is a combination of a technical analysis of the highway surface and a mechanically measured test of its rideability. Using this rating, each mile of the highway system can be compared to every other mile to establish priorities for programing asphalt concrete overlays and patching projects. Immediate needs for maintenance overlay projects exceed \$41,000,000 as of January 1, 1972.

Increased attention and concern of the public for a cleaner environment resulted in increased roadside cleanup effort, costing \$830,000 during the year 1970-71. This expenditure for litter pickup exceeded any previous year in highway history. The program was supplemented by providing job opportunities for several hundred Oregon youth during the summer. A Youth Litter Patrol was established, utilizing funds from special license fees and the Neighborhood Youth Corps Program provided young people positions with the Highway Division to help in the cleanup of roadside litter.

The Maintenance Section continued the state's minor betterment safety program during the biennium by completing selected projects that contribute to safer motor vehicle operation. A total of 344 miles of shoulders were widened,

115 slow moving vehicle turnouts constructed, and 45 narrow bridges widened.

Equipment purchases during the biennium were directed towards the continued upgrading of the Division's snow removal and sanding equipment.

The table below shows the major equipment purchased during 1971-72.

EQUIPMENT PURCHASED	
Type	1971-72
Dump Trucks	234
Utility Trucks	27
Heavy All-Wheel Snow Plow Trucks	20
Heavy 10 cu.yd. Sander Trucks	8
Rotary Snow Plows	4
Motor Graders	14
Tractor-Dozers	4
Loaders	42
Rollers	5

During 1971, five large freightliner snow plows were added to the equipment fleet. These 4x4 units, mounted with a wing plow, plow a swath of snow 20 ft. wide.

To cope with the most adverse and demanding conditions, highway equipment is getting larger and more complicated. An Equipment Operator's Training Program was inaugurated in 1971 to make the use of this equipment more efficient and safe. Each Maintenance employee is checked out in the operation of various types of equipment. Temporary employees are trained and certified to operate equipment, usually of the snow-removal type.

New maintenance station facilities were built at N. Portland and Arlington to replace obsolete and crowded facilities. A new concrete equipment repair building was built at Santiam Junction and an additional equipment repair bay was added to the Odell Maintenance Station to handle the rotary snow plows and larger patrol graders.

New sand sheds were built at Sweet Home, Prospect, Lakeview, Baker, Ukiah and Huntington. Sand sheds are a must to keep sanding material dry and usable under the snow and icing

conditions which are experienced at these locations.

Steel bridge maintenance painting contracts were completed on the Applegate River, Siuslaw River, Yaquina Bay, Isthmus Slough and Coos Bay Bridges in 1971. A new paint system utilizing an inorganic zinc base coat cover with two coats of vinyl paint was used on the coastal bridges. This paint system is expected to reduce the painting frequencies required on coastal bridges.

A new bridge inspection program was instituted to conform to recently published national standards for bridge inspection. As a part of this program, each structure is inspected and all historical, structural, and appraisal information is inventoried. This program will provide a computerized priority schedule for bridge reconstruction and maintenance.



Slide damage repair by Highway Maintenance crews on the Wilson River Highway, OREG

The Oregon State Legislative Assembly at its 1971 session directed that a program of bike trails and pedestrian paths be constructed. In response to this directive, the Maintenance Section embarked on a program of bike trails and footpath development. The initial program consisted of 12 projects and provided 28 miles of trails during fiscal year 1972.

The Radio Unit of the Maintenance Section currently operates 62 highway base stations, 47 State Police base stations, and 580 mobile units. The addition of 11 base stations and 19 mobiles for the Parks Section will be used to patrol beaches and summon emergency help. The Highway Division also operates a teletype system comprised of 27 machines, nine in the Salem area, 17 in regional and district offices and one in the Weather Bureau office in Portland. A TWX machine in the Maintenance administration office provides teletype communications throughout the United States.

PERMITS UNIT

The Permits Unit, under the supervision of the Director of Permits, is responsible for issuance of permits for construction and maintenance of utilities and miscellaneous operations or facilities that encroach upon or cross over state highway right-of-way or property; construction of road approaches to state highways; operation of oversize or overweight vehicles or combinations of vehicles over state highways; and outdoor advertising along but outside of state highway right-of-way. In addition, the Permits Unit is headquarters for the Scenic Area Board.

Assistance in the form of field investigations and supervision of permittee operations is provided on a statewide basis by personnel of the Maintenance Section.

Utility and Road Approach Permits

Oregon statutes require that any person, firm or corporation wishing to place, build or construct on the right-of-way of any state highway or approach road, structure, pipeline, ditch, cable or wire, or any facility, thing or appurtenance must first obtain written permission from the State Highway Commission. Such

permission is given in the form of individual permits having certain standard general provisions and appropriate special provisions. During the biennium it is anticipated that 1,800 permits for utility and miscellaneous facilities or operations and 1,500 permits for road approaches will be reviewed and issued.

The 1967 Legislature transferred jurisdiction over crossings of state highways by privately owned roads designed for use by unlicensed trucks from the Public Utility Commissioner to the Highway Commission. Four permits covering such installations have been issued since this transfer became effective.

Applications for the above-named permits are made to the appropriate district engineer who, after a field review, forwards recommendations to the regional engineer for further review. The Permits Unit headquarters in Salem makes a final review and, if approval is granted, issues and records each permit.



Interstate highway construction near Weatherby on the Old Oregon Trail, I-80N

Transportation Permits

The Highway Commission is authorized by law to issue transportation permits allowing operation of vehicles, or combinations of vehicles and loads, having a size and/or weight in excess of specific statutory limitations.

The law further delegates to the Highway

Commission authority to adopt a resolution authorizing operation of oversize-overweight vehicles of specified types over designated highways. The resolution is revised from time to time as additional highways or highway sections are proved capable of accommodating the larger vehicles or combinations of vehicles. A coded map is made available to the industry indicating types, lengths and weight of authorized vehicles and highways over which they may be operated without permit. Permits are issued on a single trip or continuing basis for operation of vehicles not included in the resolution and for truck and pole trailer combinations having an overall length in excess of the maximum authorized by the Commission resolution or for operation of these vehicles on highways not indicated by the resolution.

On July 28, 1970, the movement of 14 foot wide mobile homes and modulares was authorized. Movements are made under the provisions of single trip permits. With the exception of four-lane highways, test runs are required for each route requested to insure the movement can be made in a safe and expeditious manner. Subsequent applicants are not required to perform test runs if the route has been previously approved.

During the balance of 1970, 430 permits were issued for 14 foot wide movements. For the year 1971, 3,353 such permits were issued.

The Transportation Permit headquarters is located in Salem. In addition to the Salem office, there are 27 field offices conveniently located throughout the state with authority to issue transportation permits.

The total number of transportation permits issued during the years 1970 and 1971 was 78,514. These included 4,389 general hauling, logs, poles and piling; 59,501 oversize and/or overweight single trip; and 14,624 oversize and/or overweight continuing operation.

Weighmasters

The weighmaster section, directed by the Chief

SUMMARY OF PRINCIPAL STATISTICS

LOGS, POLES, PILING

	1966	1967	1968	1969	1970
Loads Weighed	106,440	220,729	241,323	203,223	161,962
No. of Weight Violations	3,756	3,761	5,094	4,443	3,565
% of Violations	1.80	1.70	2.11	2.19	2.20
Fines and Costs (Total)	\$170,405	\$153,105	\$191,688	\$170,633	\$124,826
Fines and Costs (Average)	\$ 48.26	\$ 47.50	\$ 39.96	\$ 40.75	\$ 37.50
Cases Pending as of Annual Report	225	323	297	256	236

OTHER COMMODITIES

Loads Weighed	395,481	378,657	435,019	388,317	357,664
No. of Weight Violations	3,455	3,552	3,771	3,650	3,931
% of Violations90	.94	.87	.94	1.10
Fines and Costs (Total)	\$134,960	\$130,160	\$133,683	\$148,146	\$134,345
Fines and Costs (Average)	\$ 41.45	\$ 40.00	\$ 38.82	\$ 43.57	\$ 36.49
Cases Pending as of Annual Report	199	298	327	250	249

1966 - Grand total of 788 nonweight violations - from 747 cleared cases, \$10,626.50 received.
 1967 - Grand total of 910 nonweight violations - from 855 cleared cases, \$12,794.60 received.
 1968 - Grand total of 1,051 nonweight violations - from 995 cleared cases, \$13,242.50 received.
 1969 - Grand total of 1,086 nonweight violations - from 1,035 cleared cases, \$14,191.00 received.
 1970 - Grand total of 924 nonweight violations - from 871 cleared cases, \$11,864.00 received.

Weighmaster, is divided into field, office and scale maintenance forces.

The 70 weighmasters in the field force are divided among seven weighmaster districts, and are stationed in varying numbers at 20 locations over the state. They work irregularly scheduled hours manning 61 stationary scales and 30 sets of portable scales in carrying out an inspection and weighing program. This program is designed to enforce compliance with statutory truck

weight and dimension laws, related safety laws, provisions of transportation permits, and provisions of Highway Commission resolutions. Statistical information is also gathered through this program. The data recorded on weight reports are used by the Public Utility Commission and the Highway Division for informational reports and studies.

The scale technician is responsible for the maintenance and repair of stationary and portable

scale mechanism. Through the Chief Weighmaster he also makes recommendations to district engineers regarding maintenance of scale approaches, buildings, lighting systems, and related equipment.

An average of over 590,000 trucks and combinations of vehicles were weighed in each of the last five years including 1970. A record of each truck weighed is made on punch card by the Public Utility Commission, and a record of each violation for which a citation was issued is made on a punch card by the Highway Division. Through use of the data processing equipment at the Public Utility Commission and the Highway Division, information from these cards is used to prepare comprehensive reports for use by the Legislature, the Highway Division, Public Utility Commission, other state agencies, and the trucking industry associations that are interested in the construction and maintenance of good highways. The data from this source has been invaluable to legislative and interim committees concerned with the updating of truck size and weight laws. The punch cards prepared by the Public Utility Commission remain with that agency and are used as an aid in auditing records of carriers subject to the weight-mile tax.

In addition to duties listed above, the weighmasters also perform all field work done in connection with quarterly tourist revenue studies and annual truck weight studies made by the Highway Division Traffic Section. They make many of the more complicated vehicular counts required by the Traffic Section for highway use studies, and they are called upon from time to time to perform other duties for which they are especially suited through their knowledge of vehicles, highway systems, highway safety practices and vehicle laws gained by their weighmaster training.

Outdoor Advertising Control

The 1963 Legislature transferred control of advertising signs along state highways outside of incorporated cities from the Bureau of Labor to the Highway Commission. The Outdoor Advertising Supervisor is in charge of these



Old Oregon Trail, I-80N O'xing structures near LaGrande

operations and is assisted by weighmasters and maintenance personnel throughout the state.

In order to provide a basis for administering the Outdoor Advertising Act and related statutes, a complete inventory of signs was taken. The initial inventory revealed a total of 11,250 signs, of which 5,100 were under permit. The sign inventory now indicates a total of 4,836 signs covered by permit.

Persons engaged in the business of outdoor advertising are required to obtain annual licenses. These licenses are issued by this section in addition to individual sign permits.

The implementation of sign controls in protected areas of the interstate highway system has qualified the state for a 1/2 of 1% bonus payment of federal funds on construction projects along certain sections of the interstate system. As of December 31, 1971, the Division has received \$409,389 in bonus payments. Unpaid vouchers submitted for payment amount to an additional \$24,673.

A new sign control law known as The Oregon Motorist Information Act of 1971 became effective July 1, 1971. This Act creates a Travel Information Council of 11 members. It limits outdoor advertising signs to commercial or industrial areas and places signs along state

clubs, (b) labor organizations, (c) outdoor advertising industry, (d) Oregon State Highway Commission, and (e) roadside service industries.

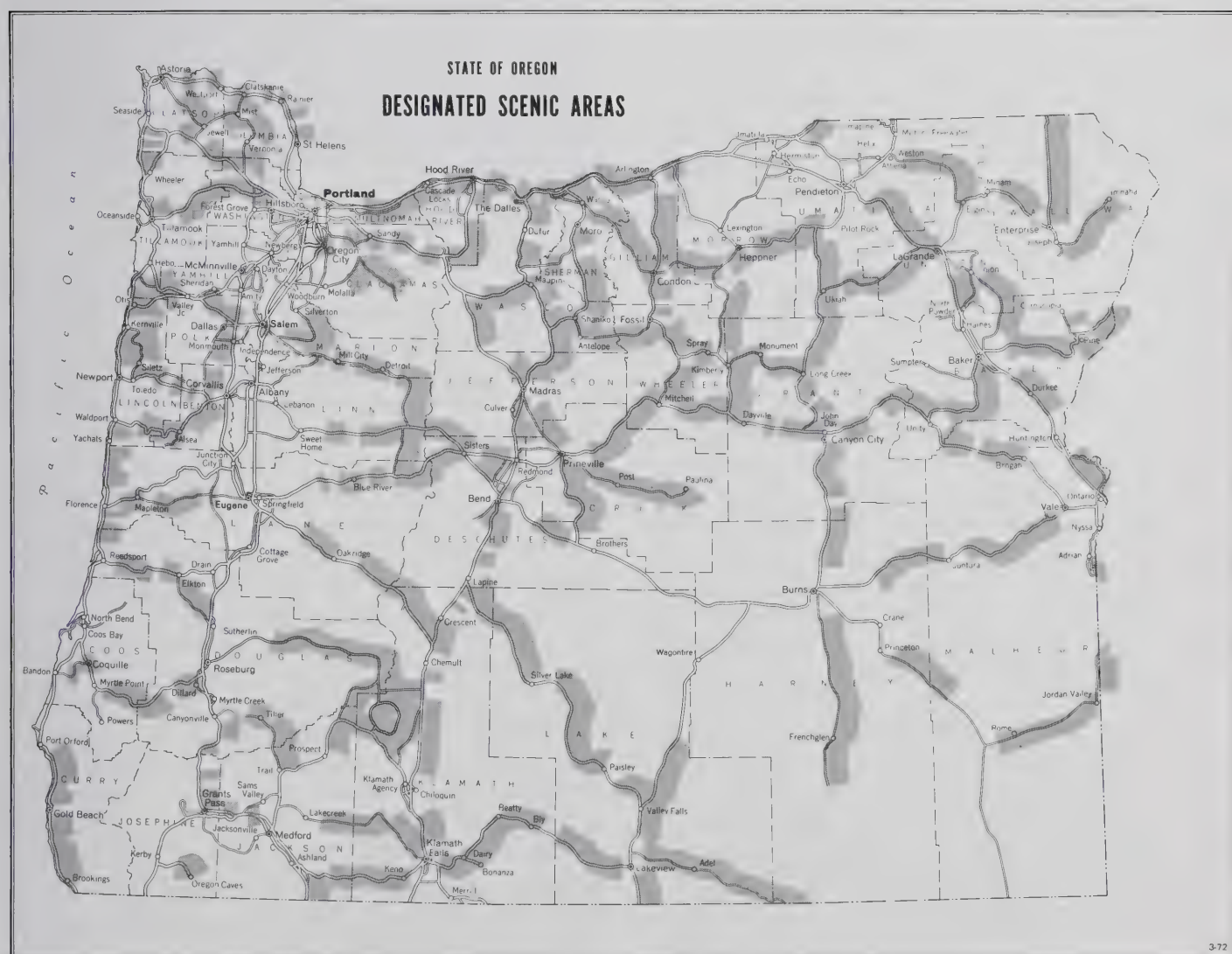
The Travel Information Council is authorized to control on-premise signs outside incorporated cities and to provide for motorist information signs on highway right-of-way, rest areas, and sign plazas.

Scenic Area Board

The Scenic Area Board, consisting of seven members appointed by the Governor, was created by an act passed by the 1961 Legislature. By law, the Board consists of two members at large representing the public and one representative from each of the following groups: (a) motoring

The Board has the power to establish or vacate scenic areas adjacent to or along public highways. A scenic area is defined as “an area adjacent to or along a segment of a public highway that is within a federal or state park, is a site of historical significance, or affords a view of unusual natural beauty, and has been established as a scenic area by the Scenic Area Board”.

The Highway Division's responsibility to the Board is to enforce its orders and render administrative assistance. Once a section of highway is designated a scenic area, no new sign permits may be issued on that section. Existing



legally erected signs are allowed to remain up to seven years before removal is mandatory.

Since 1961, the Scenic Area Board has acted

on 134 petitions covering 5,211.26 miles of Oregon highways. Final action of the Board designated 3,583.08 miles as scenic areas throughout the state.

MATERIALS AND RESEARCH SECTION

The Materials and Research Section is responsible for the development and enforcement of materials specifications. Most materials used in highway construction are covered by specifications and methods of test published by the American Association of State Highway Officials (AASHO) and American Society for Testing and Materials (ASTM). In some instances these specifications have to be modified to suit peculiarities of use in Oregon. Some materials are used which have no national specification. The Materials and Research Section assists in the creation of Oregon standard specifications for these items.

Once the standard specifications have been established, the Materials and Research Section tests and examines materials and goods submitted for purchase orders and contracts to determine that the requirements of the specifications have been adhered to. In the last biennium this section processed over 76,000 samples at the laboratory in Salem. These materials cover a wide range of types and for that reason the section is divided into several units.

All samples coming into the laboratory pass through the receiving room, where technicians determine what tests are required and assign a laboratory number to each sample for identification. This operation, and the recording and reporting of test results, come under the jurisdiction of the office engineer and his staff. The office section also handles the day-to-day operation of the laboratory, the purchase of supplies, the processing of employees.

The Soils Unit is responsible for testing of foundation, embankment, subgrade and base materials. Bridge and roadway foundation soils are tested to determine consolidation rate, permeability and shear strength. Embankment materials are tested for classification of the natural soil load-bearing capability. Subgrade soil tests include triaxial or stability and density

determinations for evaluation of the roadway pavement structure requirement. Treated and untreated base and subbase materials are tested for conformance with contract specifications. Lime treated subgrade and cement treated base mixtures are designed for base construction on contract projects. Research is in process for the development of a field control test for determination of lime content of treated subgrade soils.

Gravel, natural sand and quarry materials are tested by the Aggregate Section. Source qualification tests indicate the suitability of gravel deposits and quarry sites for the production or manufacture of hard, sound, durable aggregate. Crushed or graded aggregate produced for use in portland cement concrete, asphalt concrete or base construction are tested to determine conformance with contract specifications. Bituminous-aggregate mixture samples from construction and maintenance paving projects are tested for conformance with specification requirements. Recently completed research has resulted in the development of improved aggregate soundness test apparatus. Testing is in process to establish a procedure for vacuum extraction of bituminous-aggregate mixtures.

Asphalt-aggregate mixtures for base and pavement construction are designed by the Bituminous Unit. Natural or crushed aggregates are combined with various types and grades of asphalt to determine by test which mixture is of the desired quality for the intended use. Trial mixture tests provide information for recommending contract specification limits and construction or maintenance design mixture proportions. Core samples from constructed pavement and base are tested for project mix design and compaction control. Considerable research testing is in process to determine the durability and quality of bituminous base and pavements after ten to fifteen years of service. Bituminous pavement samples are also being

tested from selected roadways for evaluation of the layered theory approach to pavement structure design.



Old Oregon Trail, I-80N north of Ontario

Portland cement concrete mixture design for use in pavement, structure and masonry construction and maintenance is the responsibility of the Concrete Design Unit. Design mixture proportions are calculated and trial batch specimens are fabricated from materials intended for use during construction. Tests made on trial specimens provide a basis for adjustment of mixtures to obtain concrete of optimum quality. Various chemical admixtures used in concrete mixtures are evaluated and periodically checked by physical tests to determine what effect the material has on concrete strength and durability. Considerable research has been completed on the evaluation of high alumina cements in concrete for maintenance repair of pavements and structures.

The Petroleum Unit tests hydrocarbon materials for various applications. Asphalt cements, liquid asphalts and emulsified asphalts are tested for conformance with construction and maintenance

specifications. Lubricating oils, creosotes, fuel oils and pipe coatings are evaluated by physical tests to determine compliance with specifications. Research testing is in process to establish specification limits for asphalt cements in terms of absolute and kinematic viscosity.

The Physical Testing Unit has the responsibility for testing all metallic materials used in highway and bridge construction. Also, concrete test cylinders from all Highway Division projects as well as from other federal, state and county agencies are tested to determine if the concrete represented is in conformance with the design requirements. Other materials such as plastic, fiber and concrete pipe, rubber waterstops, concrete curing compounds, bridge bearing pads, welder qualification coupons and concrete block are inspected or sampled and tested by this unit.

The Materials Section maintains a staff in Portland with the responsibility of inspecting and sampling the wide range of products used in highway construction which are fabricated, manufactured or warehoused in the area. All concrete used within the metropolitan area is inspected as well as all the precast concrete beams, slabs and other concrete products. Materials such as culvert pipe, treated timber steel bridge and sign support fabrication, guardrail, paint, and traffic signs are sampled or inspected prior to shipment to various projects throughout the state. This inspecting and sampling is also performed for federal agencies, cities, counties and highway departments of other states on request and if manpower is available.

The Paint-Chemistry Unit is responsible for performing chemical analyses on cements, wood preservatives, concrete additives, alloy metals, paint ingredients and protective coatings. Physical tests of paints are also performed. Working with the Maintenance Section, specifications are established for highway striping paints as well as other paints used by the Highway Division and other state agencies.

During the past biennial period, studies have been initiated to determine the most practical paint systems for steel structures in the various climatic regions of the state. These studies will be carried out by the use of a recently acquired weatherometer and by field exposure of test panels.

PARKS AND RECREATION SECTION



The development of a 58 unit campground, day use facilities and hiking trails at the new Cape Blanco State Park will add many scenic and recreational opportunities to the southern Oregon Coast

Under direction of the State Highway Commission, the Parks and Recreation Section is responsible for acquiring lands, and developing and maintaining them as State Parks for the enjoyment of the state's residents and visitors. The section also provides assistance to other agencies; distributes the monies received from the Federal Land and Water Conservation Fund; assists in carrying out the Willamette River Park System program; supervises the policies and programs of the new Oregon Scenic Waterways Act; provides staff assistance to the newly formed Recreation Trails Advisory Council and assists in the administration of 1967 and 1969 Oregon Beach laws.

The State Parks Superintendent is responsible for the administration of the Parks and Recreation Section. The Parks and Recreation staff is comprised of the administrative office force in Salem and five District Park Supervisors located in Portland, La Grande, Bend, North Bend, and Salem. Under each District Park Supervisor is an assigned complement of park managers, rangers, aides, and clerical workers.

Several specialized units within the Parks administrative office work closely together in order to produce a comprehensive program of

park and recreational planning, development and management. The major units include land acquisition; planning, construction, maintenance and operations; recreation; business management; and special programs including the Parks

Historian, Willamette River Parks System and Oregon Scenic Waterways System.

Some of the highlights of the 1970-1972 biennium included:

1. A 23% increase in park attendance over the previous biennium for an all time record.
2. Acquisition of 14 new state park areas and 24 additions to existing parks for a total of 7,583 acres acquired during the biennium.
3. Completion of nine new overnight campgrounds and the expansion of five existing camps, plus major developments at 20 other parks including new buildings, parking and roads, landscaping and beach access.
4. Completion of eighteen projects for the acquisition of nearly 1,500 acres, having 28,400 feet of frontage (about 5-1/3 miles) within the Willamette River Park System.
5. A Campsite Reservation System and Campsite Information System were initiated and operated during the summer months of 1970-71.
6. Establishment of the Oregon Scenic Waterways System and active implementation of the new law.
7. Formation of an eight-member Oregon Recreation Trails Advisory Council as provided by Senate Bill 126.
8. Establishment of ocean beach vehicle rules and regulations for each coastal county through resolution by the State Highway Commission following public hearings in coastal counties.
9. Continued administration of the Oregon Beach laws and the relatively few applications (8) for alteration permits during the biennium.
10. Near completion of the beach access program insuring and providing public access to Oregon's ocean beaches.

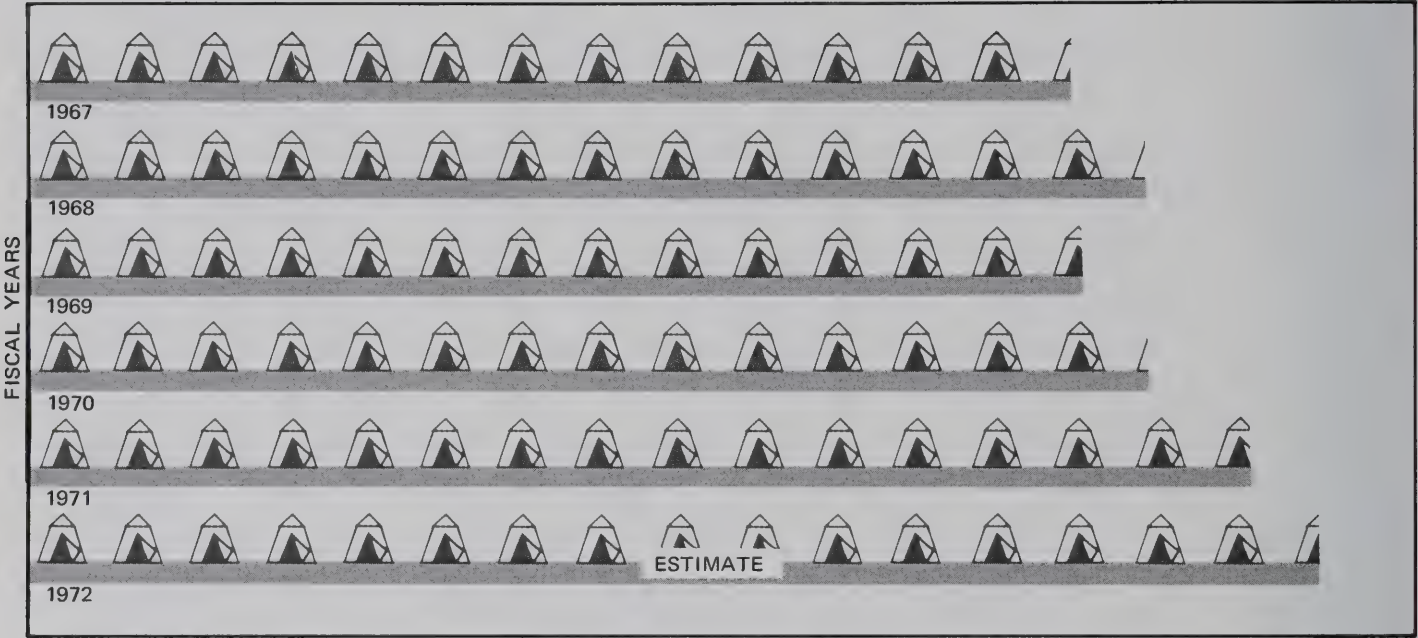
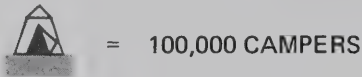
Park Attendance—A sharp increase in attendance due principally to increased facilities at Oregon's State Parks is noted for the 1970-72 biennium. The total attendance for the two-year period is expected to reach 51,718,526 visitors, an increase of almost 23% over the 1968-70 biennium. Overnight attendance increased 14.2% to a projected total for the biennium of 3,223,173 campernights. Day attendance increased by 23% to a projected total of 48,495,353 visitors. Following is a day-use and overnight

attendance for each fiscal year during the biennium.

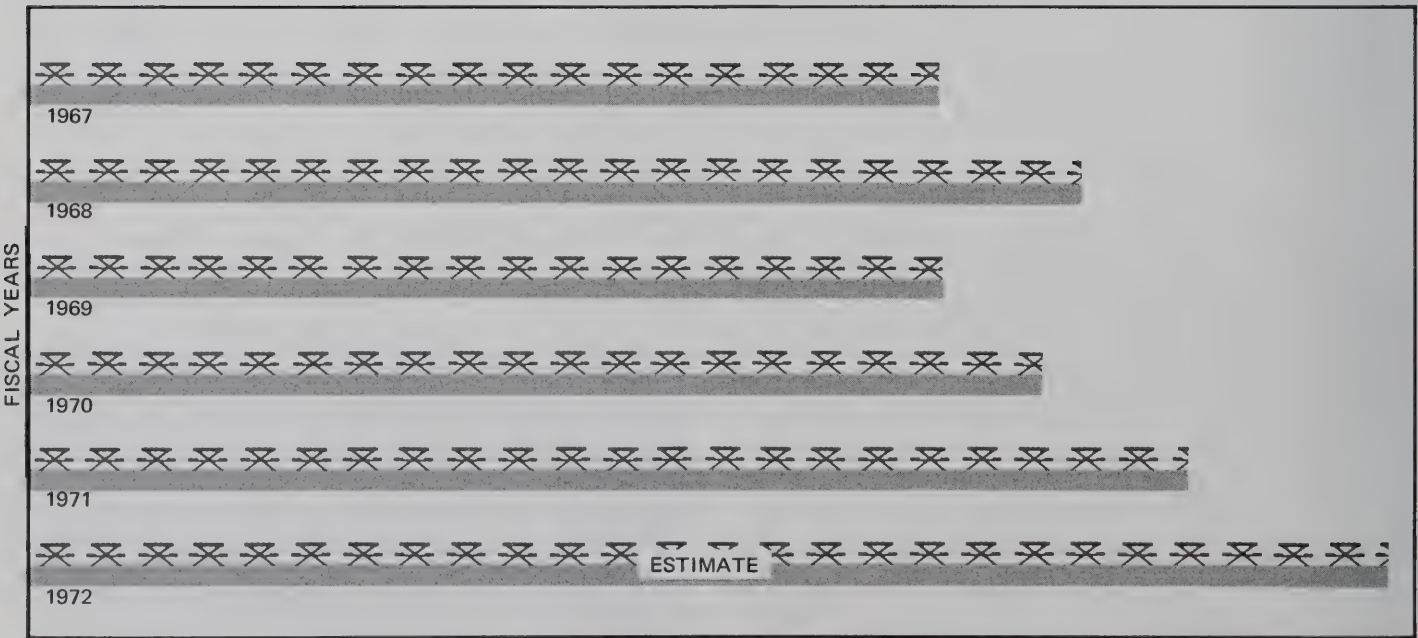
<i>Fiscal Year</i>	<i>Day Use</i>	<i>Campernights</i>	<i>Totals</i>
1970-71	22,325,353	1,578,173	= 23,903,526
1971-72	<u>26,170,000</u>	<u>1,645,000</u>	= <u>27,815,000</u>
TOTALS	48,495,353	3,223,173	= 51,718,526

ATTENDANCE AT OREGON STATE PARKS

OVERNIGHT CAMPING



DAY-USE



Land Acquisition—During this biennium, 7,583 acres of land were acquired for State Park purposes, including 3,737 acres at 14 new park sites and 3,846 acres added to 24 existing parks. As a result, Oregon's State Park System now contains 87,749 acres at 232 parks, waysides and recreation areas throughout the State.

TOTAL STATE PARKS AND ACRES

	<i>Parks</i>	<i>Acres</i>
1968	210	74,500
1970	220	80,174
1972	232	87,749

Six of the new parks provide beach access and are part of the State's continuing program of acquiring small tracts along the coast to insure public access to one of Oregon's most popular recreation attractions, its ocean beaches. Land was also added to six other parks which provide beach access.

A seventh new park, which also provides beach access, was acquired at Cape Blanco. This park offers spectacular ocean views and has a wide range of recreational attractions. The new area has sufficient acreage for fully developed park facilities including day-use areas and overnight camping facilities.

Three of the new parks acquired during the biennium will be part of the Willamette River Parks System. These parks are to provide a wide range of park facilities while preserving the scenic and natural qualities.

Tryon Creek State Park, another of the new parks, is being acquired near Portland to maintain a semi-natural area near Oregon's largest urban center.



Facilities at Farewell Bend State Park, along the Snake River and I-80N provide a variety of activities for park visitors and campers

The remaining new parks were acquired at locations throughout the State to provide scenic protection or where a need was shown for developed facilities.

State Park Acquisitions during the 1970-72 biennium include:

NEW PARKS

<i>Name</i>	<i>County</i>	<i>Acreage</i>
Arcadia Beach State Wayside	Clatsop	18.84
Bridal Veil Falls State Park	Multnomah	6.40
Cape Blanco State Park	Curry	1,880.00
Clyde Holliday State Wayside	Grant	8.10
Del Rey Beach State Wayside	Clatsop	18.70
Dexter Dam State Park	Lane	434.37
Lone Tree Bar State Park	Marion	598.00
McVay Rock State Wayside	Curry	9.00
Molalla River State Park	Clackamas	440.00
Neahkahnie-Manzanita State Wayside	Tillamook	1.25
Rocky Butte State Park	Multnomah	13.52
Smelt Sands State Wayside	Lincoln	3.86
Squaw Creek State Wayside	Lane	2.15
Tryon Creek State Park	Multnomah	302.75

Total 3,736.94

ADDITIONS TO EXISTING PARKS

Armitage State Park	Lane	15.96
Azalea State Park	Curry	10.50
Benson State Park	Multnomah	5.00
Champoeg State Park	Marion	75.35
Crooked Creek State Wayside	Malheur	40.00
Crown Point State Park	Multnomah	30.41
Devil's Punch Bowl State Park	Lincoln	1.32
Ecola State Park	Clatsop	127.50
Fogarty Creek State Park	Lincoln	2.90
Fort Stevens State Park	Clatsop	114.00
Harris Beach State Park	Curry	30.00
Hilgard Junction State Park	Union	14.00
Lapine State Recreation Area	Deschutes	270.39
Neskowin Beach State Wayside	Tillamook	0.28
Oceanside Beach State Wayside	Tillamook	0.03
Oswald West State Park	Clatsop	9.00
Painted Hills State Park	Wheeler	2,820.00
Roads End Beach State Wayside	Lincoln	3.20
Silver Falls State Park	Marion	81.15
South Beach State Park	Lincoln	47.43
Sunset Bay State Park	Coos	10.55
Tygh Valley State Wayside	Wasco	40.00
William M. Tugman State Park	Coos	80.00
Wilson River Highway Forest Wayside	Tillamook	16.84

Total - additions to existing parks 3,845.81

Total - 1970-72 biennium acquisitions 7,582.75

Total - State Park Acreage 87,748.83

Park Development—The development of new state parks and expansion of existing park areas continued to be emphasized during the 1970-72 period. Among the major park developments was the completion and opening of nine new state park campgrounds and the expansion of five existing camps providing more than 1,300 additional campsites to the State Parks System. All sites were equipped with connections for water and electricity. Additional features to the new and expanded parks included utility buildings, registration buildings, rest rooms, trailer sanitary stations, and the necessary paving and landscaping. The new areas include:

NEW CAMPGROUNDS

<i>Park Name</i>	<i>Improved Campsites</i>
Cape Blanco	58
Champoeg	45
Clyde Holliday	30
Farewell Bend	53
Milo McIver	42
Nehalem Bay	292
South Beach	257
Wm. M. Tugman	115
Viento	62

EXPANDED CAMPGROUNDS

<i>Park Name</i>	<i>Improved Campsites</i>	<i>Total Sites (1972)</i>
Detroit Lake	71 added	320
Fort Stevens	120 added	603
Harris Beach	43 added	151
The Cove Palisades	91 added	272
Valley of the Rogue	55 added	174

Other major developments in Oregon State Parks during the 1970-72 biennium include:

Park Name *Developments*

Agate Beach—Toilet building, parking, paving, landscaping, pedestrian underpass.

Brookings Information Center and Rest Area—Construction of Information Center and rest area facilities, parking.

D River—Beach access area, parking, toilet building, landscaping.

Dabney—New day use area, toilet building, roads.

Del Rey Beach—Beach access.

Driftwood Beach—Beach access, toilet building, parking, landscaping.

Fort Stevens—Paving of spit beach access and parking areas.

Gateway—Rest area and Visitors Information Center.

Gleneden—Paving of parking area.

Jessie Honeyman—Paving, landscaping of day use and overnight areas.

Mary S. Young—Toilet building, trails, paving of roads and parking areas, irrigation system.

Neskowin Beach—Toilet building, landscaping, paving.

Ona Beach—Footbridge.

Roads End—Beach access, parking.



New facilities at "D" River State Wayside contribute to the continuing program to acquire and develop public beach access sites along the Oregon Coast

Rooster Rock—Rock groin to protect the boat channel.

Seven Devils—Beach access, roads and parking.

Silver Falls—Bathhouse, toilet building, roads, trails.

Tolovana—Toilet building, landscaping.

In addition to these developments, many other major betterment and construction projects were carried on by State forces. These include upgrading of parks water and sewage disposal systems; construction of boat moorage and courtesy dock facilities; extensive placement of concrete curbing; paving of hardstands in camp areas, landscaping and installation of irrigation systems; and generally the continued upgrading and improvement of existing state park facilities.

Campsite Reservation System—During the summer of 1970, a Campsite Reservation System was initiated at selected Oregon State Parks for the first time. The system was met with much public enthusiasm and acceptance and continued to gain popularity during 1971, the second season of operation.

Reservations in 1970 were available at ten Oregon State Parks, seven along the coast and three inland. In the first year of operation 25,472 people made reservations at these parks. In 1971 reservations were available at eleven parks with seven coastal and four inland parks. Even though the reservation season was shortened by 43 days, the number of reservations made increased by 86% over 1970, to 47,375. In the parks accepting reservations, the number of turnaways decreased during both years of operation.

The State Parks which accepted reservations during 1971 were Fort Stevens, Cape Lookout, Beverly Beach, Beachside, Jessie Honeyman, Sunset Bay, Harris Beach, Detroit Lake, Prineville Reservoir, The Cove Palisades, and Wallowa Lake.

Campsite Information Center—The Campsite Information Center was also initiated during 1970 and provided information on the availability of campsites in State Parks to anyone calling the Salem Center, toll-free, from anywhere in Oregon. Callers also receive information about campsite reservations, State Park facilities, activities, and general information about other agencies' recreational facilities. A major function of the Telephone Center during 1971 was to accept

campsite reservation cancellations toll-free.

During the first year of operation, 12,700 telephone calls were received, an average of 128 calls per day. The greatest percentage of the calls were about the reservation system, and how and where they could be made. The second year of operation saw a 73% increase in calls to the center with 22,000 telephone calls received. The question most often asked in 1971 was about the availability of campsites in State Parks.

Vandalism in the parks, while considered to be relatively low in relation to use, increased during the biennium. Costs for vandalism repairs for the first 18 months of this period amounted to \$14,040 as compared to \$11,416 for a corresponding period in the previous biennium, a 23 percent increase.

PARKS PLANNING

The Parks Planning Unit was most active regarding the following major activities and projects during the biennium:

Federal Agency Coordination for six projects; Willamette River Parks System master planning investigations for five state park areas; Oregon Trail study; South Santiam Scenic River study; major park development studies for five state parks; investigation of more than 50 locations as potential state park sites; analyzed 13 Ocean Beach construction permit requests; accelerated recreational trails program; analyzing and publishing the results of the park visitor survey conducted in 1969.

Highlights of the park visitor survey included:

- Usable questionnaires were returned from over 12,000 day visitors and 4,500 overnight campers.
- 62% of the day visitors were from Oregon and 63% of the overnight campers from out of state.
- 40% of the overnight campers utilized trailers and 26% tents.
- 41% of the day visitors and 30% of the overnight campers were at the park because of a previous visit, while another 30% of the campers learned about the park from a map, brochure, or camping guide.
- Day visitors averaged 6.6 visits to the park per

year, overnight campers 2.5 visits per year.

- *Day visitors staying at the park less than one hour averaged 30 minutes, those staying more than one hour averaged nine hours; overnight campers averaged 2.8 nights at the park.*
- *The most popular activities with day visitors were loafing and relaxing, picnicking, and sightseeing; overnight campers enjoyed camping, loafing and relaxing, and sightseeing.*
- *Park improvements desired by day visitors included picnic shelters and supervised swimming areas; overnight campers wanted more trailer sites and campsites farther apart.*
- *Day visitors spent \$4.79 per person per day and overnight campers \$7.10 per person per day within 25 miles of the park.*
- *Estimated expenditures within 25 miles of the 31 parks surveyed totaled nearly \$30,270,000.*

As a result of increased public interest in the use of trails in Oregon, as evidenced by the passage of the Bicycle Trails Bill (H.B. 1700) and the Oregon Recreation Trails System Act (S.B. 126) by the 1971 State Legislature, the Parks and Recreation Section is expanding its trails program including the improvement of existing trails and the development of new trails to help meet present and future needs. Bicycle trails are planned at Fort Stevens and Champoege State Parks, and development of bike trails is also under consideration at other state parks, particularly near urban areas. Improvement of a number of existing state park trails is also planned including distance and directional signs, trail route maps, benches, safety fencing, interpretive signs, and where necessary, reconstruction or relocation of badly worn sections of trail.

To assist the State Highway Commission and the State Parks Planning Staff in the development of a statewide system of recreational trails for hiking, bicycling and horseback riding, the Oregon Recreation Trails Advisory Council, under provision of Senate Bill 126, was formed. Members of the Council are:

Ernest Drapela, Chairman	Eugene
Henry R. Rancourt, Vice Chairman	Portland
Gwen T. Coffin	Enterprise
Mollie Currie	Lake Oswego
Robert Perkins	Coos Bay
Max Schafer	Seaside
Vivian Staender	Sisters
Carwin Woolley	Portland

Parks Historian—During the biennium, the projects of the State Parks Historian included the preparation of a preliminary statewide plan for historic preservation and grant requests for acquisition and development of historic sites under the program authorized by the National Historic Preservation Act of 1966. A dozen additional Oregon properties were entered in the National Register of Historic Places. Participation in the state's museum-aid program was increased from 11 to 16 counties. A long-range program to protect and interpret the Oregon Trail was initiated.

Recreation Unit Activities—One of the major activities in the State Recreation Director's office was the administration of the Federal Land and Water Conservation Fund Program. During the 1970-72 biennium, the total dollars available for allocation increased to \$9,893,444. Virtually all of the foregoing amount has been obligated to park acquisition and development projects by state and local agencies. More than 400 projects have been approved for grants under the program since it began in 1965.

Revision and updating of the Statewide Comprehensive Outdoor Recreation Plan has continued. The 3rd Edition Supplement was abstracted and printed, a private sector survey was completed and a 5-year schedule of acquisition and development for Federal, State and Local Agencies was finalized. A statewide area activity preference survey and updating a facility inventory have been completed.

Information and technical assistance to local agencies, universities, professional organizations and others regarding park facilities and recreational programming showed a considerable increase during the biennium.

Willamette River Park System—The Willamette River Park System was established by the 1967 Legislature to set up a program establishing a park system along the Willamette River from the Columbia River to the Dexter and Cottage Grove Reservoirs, and to aid local governments in acquiring lands or rights in land for scenic and recreation purposes along the river. During the 1970-72 biennium 18 projects were completed for a total of 1,497 acres having 28,398 feet, or 5-1/3 miles of river shoreline.

Because the Willamette River Park System program was progressing slowly, due to the lack of matching funds by local governments, the Governor and the Willamette River Park System

Committee decided upon a new course of action. The Highway Commission offered to use up to \$5 million of their bonding capacity to provide the state with funds to acquire lands along the Willamette River. An application was approved by the Bureau of Outdoor Recreation for \$5 million to match the State's \$5 million. The proposed \$10 million will enable acquisition of approximately 15,000 acres having about 156 miles of Willamette River banks. This program together with the local program and the State Parks program will complete about 85% of the Willamette River Park System program as originally envisioned.

OREGON SCENIC WATERWAYS SYSTEM

The passage of an initiative measure in November, 1970, established the Oregon Scenic Waterways System. Segments of the Rogue, Illinois, Deschutes, John Day, and Owyhee Rivers and all of the Minam River were named as the original components of the system. Within one-quarter mile of their banks changes of land use and new construction require approval of the State Highway Commission. Dams and impoundments are prohibited and the natural scenic beauty of the rivers and related adjacent land is to be protected. Provision is made for the Governor to add other free-flowing streams after study and recommendation by the State Highway Commission and State Water Resources Board.

Rules for administration to "protect or enhance the esthetic and scenic values of the scenic waterways and permit compatible agricultural, forestry and other land uses," as the Act directs, have been prepared. A substantial number of proposals for new construction and land use changes have been investigated and acted on by the Commission.

Continuing studies of other rivers as possible additions to the system are under way.

BEACH LAWS, RULES & REGULATIONS

The Parks and Recreation Section continued to assist in administering the beach laws adopted during the 1967 and 1969 Legislatures. The laws designate the beach as a recreation area and prohibit the construction of improvements on the ocean shore without a permit from the State Highway Commission; establish control of sand removal, pipeline and other conduit crossings, and exploration for treasures; and control the use of vehicles within the ocean shores area. During the

first 18 months of the biennium, eight permit requests were received by the Division. These included one for beach cleanup, one for pipeline outfall, and six for construction. Four of the applications were granted and four are still pending.

Beach vehicle rules and regulations for each coastal county were established in 1970 through resolution by the State Highway Commission following public hearings in coastal counties. The Oregon State Police hired, trained, equipped and supervised 18 cadets (adult college students), in 1970, and 35 cadets in 1971, to patrol the beaches during summer months. The performance of the cadets and the results obtained were most commendable in the enforcement of beach regulations and in assistance extended to people in distress along the beaches.

The Highway Commission is assisted in park and recreation policy matters by a nine-member State Parks and Recreation Advisory Committee. Members include Loran L. Stewart, Eugene, chairman; Donald G. McGregor, Grants Pass, vice chairman; Alfred D. Collier, Klamath Falls; Garnet Cannon, Portland; Eric W. Allen, Jr., Medford; P. M. Stephenson, Salem; Warren McMinimee, Tillamook; Roger Loennig, Haines; and J. W. Forrester, Jr., of Pendleton, who replaced Ernest Fatland upon the expiration of his term. All have extensive experience in various aspects of outdoor recreation.

Five meetings were held during the report period by the Committee, which also utilized the conference call on three occasions as an efficient means of arriving at a recommendation to the Highway Commission.

Major items considered by the group during the biennium included: policy recommendations on concessions, park naming, land leases, hunting in state parks, and treasure hunting and rockhounding in state parks.

The Committee's opinion was also sought on such matters as the campsite availability information center, the campsite reservation system, recognition of individuals for their contributions, environmental issues, and proposed acquisitions.

The annual inspection trips by the Committee included Central Oregon in 1971 and the Southern Oregon Coast in 1970. Participation in the dedication of the Sam Boardman plaque was included in the latter trip.

PERSONNEL SECTION



Reconstruction completed on US395 south of Lakeview

The 1971 Legislature enacted several major improvements in the Public Employes Retirement System and also reduced the compulsory retirement age from 70 to 65. Due mainly to the improved retirement benefits, a total of 143 employees retired during the biennium and predictive figures indicate continued heavy retirements in the next several years.

The biennium brought an accelerated construction program and a gradual increase in the total permanent work force, mainly relating to construction. The Parks and Maintenance Sections remained stable as the total average number of employees during the biennium increased from the previous 3,400 to 3,534. A large number of seasonal employees were used to supplement the permanent work forces in Maintenance and Parks.

It is anticipated that during the complete biennium over 75 graduate civil engineers will have been hired and nearly 100 engineering graduates from two-year vocational technical schools with civil engineering technology degrees.

Seventy-two students were hired during the

summer of 1971 to pick up litter along the state highways and the program will continue during coming seasons. The program, which was classified as highly successful, was paid for entirely by the income derived from the special motor vehicle license plates. In addition, during the biennium, 15 minority students worked in an on-the-job training program one day a week and during the entire summer season. In March, 1971, a new collective bargaining contract was signed by the Division and the Association of Engineering Employes of Oregon and the Oregon State Employes Association. In August, 1971, the Main Unit contract with OSEA was amended and modified. The changes brought about by these collective bargaining agreements and new laws passed by the 1971 Legislature necessitated a reprinting of the Personnel Rules for the Division.

In order to keep Highway employees and supervisors well informed on Division activities and changes several issues of the employee magazine, *Personnel Observations*; the special news letter, *Personnel News Briefs*; and the supervisory publication, *The Center Line* were published.

TRAINING UNIT

In August, 1970, a Training Unit was created and the Highway Division's first training officer was added to the Personnel Section.

The Division's share-the-tuition plan for employees was expanded to include correspondence courses. Over 300 employees completed job-related courses successfully and received nearly \$6,000 in reimbursements. Added emphasis was placed on supervisory training and approximately 300 employees participated in one or more of the state-sponsored courses in this field.

Heavy Equipment Mechanic Training Programs were started in the equipment repair shops at Salem, Bend and La Grande. An individual, tailored program is set up for each trainee. On-the-job training, night classes, and self-study courses are methods used to fill the trainee's needs.

Equipment operator training and certification for all field employees that operate equipment larger than pickups or carryalls was initiated during 1971. Training programs covering operation and maintenance are prepared for each class of equipment. One to four men in each region were selected to serve part-time as equipment operation instructors. They were greatly assisted by the superintendents and lead mechanics from the equipment shops.

A means to allow employees to develop to their full potential and at the same time provide trained personnel for future managerial positions are the goals of the Managerial Development Program that is being developed. An inventory listing the skills, abilities and training needs of management development candidates is being compiled. Individual plans for development of each candidate will be prepared.

SAFETY UNIT

Heavy emphasis on accident prevention was initiated in July, 1970, when the State Highway Engineer announced an Intensified Safety Program. The program requires that all levels of supervision, including middle and top management, hold periodic safety meetings; and communications between the levels of supervision

on safety has been improved.

Following a study made by the Safety Unit of accident prevention programs of other state highway departments, the Oregon Highway Division has adopted a program of preemployment physical examinations as a part of the screening process for new employees. The intent of the program will be to avoid hiring persons with physical disabilities for positions in the Division which require heavy manual exertion.

The Highway Division continues to enjoy a good vehicle accident rate which can be attributed to the defensive driving training which has been given to a good share of its vehicle operators. Each vehicle accident is thoroughly



Safety meetings are conducted regularly such as this one on proper plow adjustments

investigated and evaluated by line supervisors, and the Division's Safety Board. Disciplinary actions are assessed to vehicle operators when it is found their negligent operation of a vehicle caused an accident.

A total of 168 Awards of Merit were issued to field crews who worked a year without incurring a preventable vehicle accident or on-the-job, lost-time injury for the fiscal period ending June 30, 1971. Special recognition was given to the Jordan Valley and Spray Section Maintenance Crews for an outstanding record of 11 years each of earning awards of merit.

PLANNING SECTION

The Planning Section is responsible for providing the Highway Division with information concerning the existing and future transportation usage, service and road-user costs of transportation facilities, as well as the economics of transportation operation and financing and other transportation-oriented statistical data. These activities are a part of the continuing transportation planning program conducted in cooperation with the Federal Highway Administration.

The Planning Section is composed of three units: Traffic Studies, Inventory and Needs, and Environmental.

TRAFFIC STUDIES UNIT

The Traffic Studies Unit is divided into 3 subunits:

Urban Studies Subunit -- The Urban Studies Subunit is responsible for conducting areawide transportation studies in urban areas. The Federal-aid Highway Act of 1962 requires that to receive federal-aid funds to construct highways in urban areas having a population of 50,000 persons or more, the project must be based on a cooperative, comprehensive and continuing transportation study. The plans developed from these transportation studies are based on the analysis and interpretations of pertinent data concerning existing conditions and historical growth of the area, the establishment of community goals and objectives, and the forecasting of future urban development and future travel demands. It includes not only the initial preparation and evaluation of a transportation plan through an appraisal of practicable alternatives, but also periodic review and modification to meet changing conditions. In addition, the study includes the preparation and dissemination of pertinent information needed by official agencies in their consideration of planning proposals and improvement programs and for the encouragement of public understanding and support. These studies also include recommendations concerning the scheduling and financing of transportation improvements, coordination with other urban development programs, and the revision of ordinances and

regulations, if necessary.

There are continuing transportation studies being conducted by the Planning Section in cooperation with the local jurisdictions in the three urban areas of Oregon which fall under the Highway Act; they are Portland, Salem and Eugene-Springfield.

In addition to these three major transportation studies, four areas with central city populations under 50,000 persons now have transportation studies in progress. These are Bear Creek (Medford-Ashland), Corvallis, Roseburg and Albany.

Highway Division studies resulting in Street and Highway Plans are also being conducted in 20 areas with populations of over 5,000 people. Such studies are being carried on in Astoria, Baker, Bend, Coos Bay-North Bend, Cottage Grove, Dallas, Forest Grove, Hillsboro, Klamath Falls, La Grande, Lebanon, McMinnville, Newberg, Newport, Ontario, Pendleton, St. Helens, The Dalles, Woodburn and Monmouth.



Bridge construction north of Ontario on the Old Oregon Trail, I-80N

Economic Subunit -- The Economic Subunit is responsible for working in cooperation with local planning agencies in conducting the land use and socioeconomic portion of the various urban transportation studies.

In addition, the subunit compiles statistical data on motor vehicle registrations, highway taxation and vehicular miles of travel and estimates future projections of these data. Assistance was also given to the Governor's appointed task force on the Willamette Valley Environmental Study.

It is also the responsibility of this subunit to conduct economic studies made by the Highway Division, such as the economics of route selection, the out-of-state tourist expenditures, highway taxation studies, road costs and life expectancies and future traffic projections. This subunit is also responsible for reviewing statistical data in other studies conducted by the Highway Division.

INVENTORY AND NEEDS UNIT

The Inventory and Needs Unit maintains inventory records covering the state highway system. From this information, the deficiencies of the various sections of highways are determined. To these deficiencies are applied standardized methods on a uniform basis to extract an array of priorities for use in programing. The inventory information collected by field teams is transferred to punch cards and processed through data processing methods for the special purposes required. Every section of highway in the state has its basic characteristics recorded and considered; these include traffic volume, width, geometrics and the capacity/volume ratio.

This unit periodically updates the cost of completing the Interstate highway system as is required by congressional statute. The ratio of apportionment of federal funds to the states is based on this revised estimate.

Other assignments of this unit include a study and report for the *National Highway Functional Classification and Needs Study*. This study on the national level will review, on the basis of need, the equities of revenue sources and the equities of distribution of federal funds to the systems and states.

ENVIRONMENTAL UNIT

Changing attitudes in public opinion coupled with increased public awareness has prompted the Oregon Highway Division to increase its efforts

to provide environmentally sound transportation facilities. One specific development has been the formation of the Environmental Unit within the Division--an important addition if environmental factors are to be included in the total highway project. In order to define its responsibilities, the unit has set four basic goals:

- I. To ensure that environmental factors are considered during all phases of transportation planning and development.
- II. To promote public awareness, understanding and participation in all phases of transportation planning and development.
- III. To promote confidence and public trust in all aspects of environmental studies.
- IV. To advocate use of advanced technology and promote research in unresolved environmental problems.



The acoustical engineering team conduct roadside traffic noise measurements as part of the overall effort to consider noise and air quality in planning highway projects

A major function of the Environmental Unit is the undertaking of environmental studies and associated environmental impact statements. The impact statement is a comprehensive review of a proposed highway project which includes information such as project description, probable

impact on the environment, steps taken to minimize impacts, and a discussion of alternatives to the proposed project. During preparation of the impact statement the unit gathers information concerning the resources affected by the project, with particular emphasis placed on the special features of location and design that minimize adverse impacts. Upon completion, the impact statement is circulated for review by various local, state and federal agencies, special interest groups and the public at large. Comments received in response to an impact statement are collected and considered in final design modifications prior to project approval and construction.

The most significant accomplishment of the Environmental Unit has been the development and implementation of the environmental impact statement review process. This required interpretation of federal and state guidelines and directives, development of a clear and concise impact statement format to carry out the guidelines and distribution of the completed

statement to all interested parties. In addition to implementing its own program, the unit has provided advice and instruction to other agencies developing similar programs.

The unit has also been instrumental in establishing and maintaining effective working relationships with state and federal agencies at the staff level. In some cases, this was the first time staff contact has been made on a regular basis.

The Environmental Unit has also been aided by input from various sections of the Highway Division, including Hydraulics, Traffic, Location, Design and Landscape. As a result, special design considerations have been implemented to minimize impacts, route modifications have been recommended and adopted to avoid problem areas, and recreational projects have been advanced including parks, viewpoints and scenic waysides. These are but a few of the accomplishments made by the unit in its short-time operation.

PROGRAMING SECTION



Weatherby Safety Rest Area on the Old Oregon Trail,
I-80N in Baker County

The Programing Section conducts its operations through eight diversified units. Responsibilities range from scheduling and programing funds for construction activities to preparation of contract specifications, graphic and reproduction services.

Administration Unit

The Administration Unit maintains an up-to-date work schedule for construction activities reflecting highway needs compatible with available funds, provides budget control for various construction programs, and schedules and coordinates activities with regard to public hearings.

Prior to requesting location approval, all federally assisted projects must be coordinated to assure compatibility with comprehensive planning efforts at the various levels of government. Such coordination is provided by a project notification and review system consisting of a single clearinghouse at the state level and 14 clearinghouses at the regional level.

All projects are submitted to the state clearinghouse for coordination with interested state agencies and to the appropriate regional clearinghouse for coordination with local governments and other regional or subregional agencies. This coordination may involve only approvals from the interested agencies or may



Hubbard Interchange on Pacific Highway, I-5

require extensive meetings and studies to resolve differences and to provide the mutually beneficial coordination desired.

Other activities in this unit include budget control, payroll, personnel, records, and internal functions for the Programing Section. Finance and statistical records are maintained to assist in forecasting construction programs. Historic statistical records, construction progress statements, and information for annual and biennial reports are assembled by this unit. These reports are used for answering requests for information concerning Highway Division activities from the Legislature, public and private agencies, newspapers, and individuals. Highway map revisions are furnished, by request, to mapping agencies to assist them in keeping their highway maps current.

The typing staff for the section is a part of this unit. In addition to general secretarial and typing duties, this staff is responsible for typing all contract special provisions and related contracting information. Cold-type composition for all sections in the Highway Division is prepared by the typing staff to supply

photo-ready copy for various technical manuals, graphic material, mapping, and reports such as the biennial report.

Mileage Control Unit

The Mileage Control Unit keeps a current inventory of the mileages on the state and federal highway systems. Also, a continuing study of the physical features of the Interstate System Traveled Way is conducted for future use in planning state and national highway programs.

This unit has the responsibility of preparing and revising highway straight-line maps upon which milepoints of specific highway features and roadside culture are identified. In addition, the Mileage Control Unit compiles state and federal highway mileage reports, vehicle and ton-mile reports, highway logs, and lane-mile summaries; computes mileages between cities; and drafts various maps and charts of the state and federal-aid highway systems.

Other functions of this unit include furnishing data and drawings for use in reports of other divisions, computing mileages for use on highway signs, and conducting special studies as needed for use by the state and the Federal Highway Administration.

Federal-Aid Unit

The Federal-Aid Unit programs with the Federal Highway Administration all construction, right of way, and preliminary engineering projects that will include federal participating funds. Federal funds are apportioned to the various states each fiscal year. Prior to receiving bids on construction work programs, final plans, specifications and estimates are assembled and submitted for review and approval by the Federal Highway Administration.

Engineering Graphics Unit

The Engineering Graphics Unit prepares public hearing maps; sketch maps, which includes corridor-design, survey approval, beach restriction, and scenic strip maps; and application maps for submission to governmental agencies for proposed highway alignments. The official state highway map is also prepared by this unit. In addition to mapping projects, all graphics requirements; i.e., travel folders, visual aids and printed reports, are assembled by this unit for the Highway Division and many other state agencies.

Three-dimensional displays are prepared annually for the Highway booth at the State Fair in Salem. Travel Information requires various displays to advertise Oregon at travel and boat shows.

Graphic art projects account for 50 percent of production time of the section. The Highway Commission biennial report is a product of Engineering Graphics, along with the State Boating Guide, Parks Guide, Capitol Guide, Freeway Guide and Bicycle Trails Manual. Periodically, these and many other publications are designed camera-ready for reproduction.

Graphic displays are prepared as required for a mobile display trailer that is being used state-wide to keep the public better informed of Highway Division activities.

A continuing task in the drafting area is preparing, correcting and revising the highway file maps and plans; these are the 1"=100' "as constructed" drawings, 1"-400' construction maps, and the necessary right-of-way drawings for federal-aid projects.

Photocopy & Map Distribution Unit

The Photocopy Unit furnishes the reproduction needs of the Highway Division. It employs a variety of copying equipment capable of any reproduction task.

The Map Distribution Unit contains files on more than 800 types of maps and allied publications. In addition to supplying Division needs, over 20,000 maps are distributed annually to local governments and are available to the public.

Contract Payments Unit

The responsibility for fiscal control on all contract payments, including structures, is within

the scope of this unit. Each month progress estimates on all active contracts are processed for payment to contractors for work performed. Progress records have been maintained on a monthly average of 130 active projects.

This unit also prepares the original estimate forms, records and checks all change orders, and performs all duties involved assuring that the contractors are properly reimbursed for work performed.

In 1971, contractors receive an estimated \$123,700,000 for work performed on State Highway projects, as compared to \$87,600,000 in 1970. The largest single monthly payment was \$2,800,000 on the Fremont Bridge project.

Final Estimates Unit

The Final Estimates Unit checks all finish calculations submitted by resident engineers to substantiate the quantities for which the contractor is entitled to payment. The Final Estimates Engineer certifies that all calculations are correct and that final contract payment can be made upon acceptance by the Highway Commission.

Specifications Unit

The Specifications Unit is responsible for preparation of the final special provisions, the proposals for receiving bids, and the quantity estimates on work to be contracted.

Working with other sections of the Oregon State Highway Division, the Specifications Unit assembles data necessary for a contract letting.

An additional function of this Unit is distribution of all contract plans, proposals and special provisions to contractors prior to a contract letting. Upon award of a contract, contract documents are assembled and distributed.

PUBLIC AFFAIRS

The Public Affairs Section was formed during the past biennium by consolidating other activities in the Highway Division under a Director of Public Affairs.

This section furnishes information required by the public in the Travel and Information

category including distribution of highway maps and other brochures of interest to the traveling public or tourist. The Travel Information Unit also provides the Capitol Guide service, of which an estimated 155,000 people will avail themselves during the biennium. The Public Information Unit has the responsibility for getting public

information regarding actual or proposed highway activities to the news media, thus assuring a well-informed public in Highway matters.

Through this section, the Highway Division maintains routine liaison with the Legislature, furnishing information required in their deliberations.

East Portland Freeway, I-205
undercrossing of Sunset Ave.
near West Linn in Clackamas
County



RIGHT OF WAY SECTION

Under the supervision of the Right of Way Engineer and his assistants, the section operates a staff of highly trained and specialized personnel who provide the services needed in the acquisition of land necessary to carry out the responsibilities of the Highway Division.

Liaison agents are assigned to each highway project for consultation and liaison with engineering forces engaged in location surveys. This provides better understanding of the impact the highway improvement has upon private properties and, wherever possible, reduces the effect thereof to the least possible injury to such property. Experienced appraisers are available to appraise properties prior to negotiation. Agents trained in the field of negotiation are used in contacting each property owner to attempt to acquire the needed lands by negotiation and purchase. The Property Management Unit is organized to manage the property acquired until it is actually put to use. This unit also disposes of all excess properties not needed for highway purposes. Agents who are skilled in providing relocation assistance to displaced persons are included on the staff.

During the biennium, the relocation program was greatly expanded. On January 2, 1971, the President signed Senate Bill 1 of the 91st

Congress into law. This Act is known as the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970". On May 7, 1971, Oregon's Governor signed House Bill 1933 into law. This law authorizes the Highway Division to comply with the provisions of the Federal Uniform Relocation Act.

The Federal Act provides for numerous payments and benefits over and above the payment for real property. Owner-occupants may be eligible for additive payments to enable them to purchase decent, safe, and sanitary replacement dwellings. Owners and tenants are each eligible for a moving payment to cover the cost of moving their personal property and household effects.

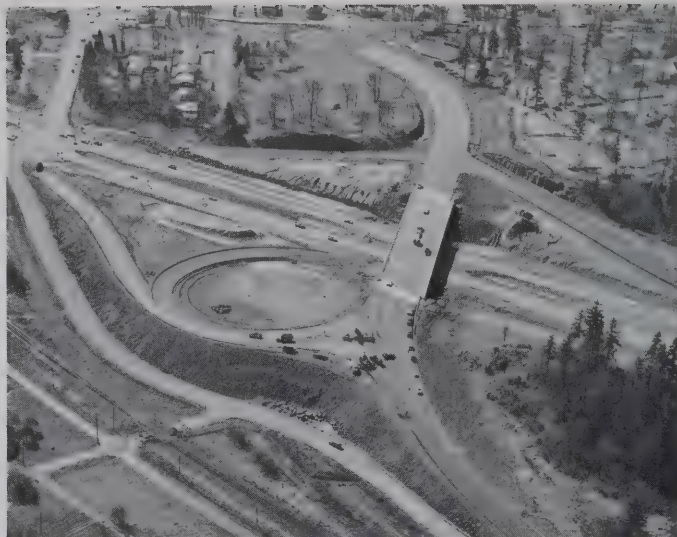
The regulations attendant to the administration of the Federal Act are rather complex; therefore, it has been necessary to train and assign a number of agents to relocation activity to handle the program. These relocation agents are conversant with the relocation program and are able to render relocation assistance wherever needed.

The actual negotiations for a property commence after an appraisal has been made and reviewed and the relocation benefits have been

computed. Direct personal contact is made with the owner of each property, whenever possible, to negotiate with him as to compensation to be paid. A written option agreement is given to each owner which contains the terms and conditions of the purchase, as well as the State's determination of compensation to be paid for each property. Leaflets are furnished each owner, which explain the process of right-of-way acquisition and the rights extended in each instance as to relocation assistance, relocation additive payments, rent supplements, reimbursement for moving expense, and what may be expected in the way of eminent domain procedure in the event the owner and the State cannot agree as to compensation.

If an agreement cannot be reached with the owner as to compensation to be paid for his property, the Right of Way Section prepares a proceeding in condemnation and submits it to the Chief Counsel for further handling. The Commission, by resolution, declares the necessity of acquiring the property for a public use and authorizes the Chief Counsel to file appropriate legal proceedings. These proceedings are filed in the Circuit Court for the county where the property is located. Service of summons is made upon all parties having an interest in the land, and the matter progresses as in other such legal proceedings. If immediate possession is to be taken by the State for a public purpose, a deposit is made into court for the use and benefit of the property owners. Should the case be tried and the owner receive a verdict in excess of the State's offer prior to filing of the complaint, reasonable attorney's fees are assessed by the court to reimburse the attorney representing the owner, along with a payment to reimburse the property owner for his expert witness and appraisal costs.

The above procedures have, over the years, resulted in acquisition of a substantial number of needed properties by negotiation. During the biennium, a total of 2,700 parcels were acquired at a cost of \$33,875,000. Of this number of parcels it was necessary to file condemnation complaints in 295 cases or approximately 11 percent of all acquisitions. Of those condemnations which are filed, many are settled without resort to an actual trial. For the biennium, 70 condemnation cases were tried, and 225 cases were settled. This indicates that



East Portland Freeway construction at Gladstone, I-205

approximately 97.5 percent of the acquisitions were by option and deed, and 2.5 percent were by eminent domain proceedings.

American Appraisal Institute courses were offered at Portland State University during the biennium. A number of right-of-way agents attended the two-week courses. The Highway Division encourages agents who are engaged in the appraisal process to attend these courses.

An attempt is made to accomplish as much of the appraisal work with staff personnel as is feasible. Fee appraisers are employed where excessive work load dictates especially if it is not economical or justifiable to enlarge the staff to handle projects which are needed on short notice. Fee appraisers are also employed for the unusual property which requires an appraisal by a specialist, or in the case of condemnation action where a supporting witness for the staff appraiser is needed. During the biennium, 5,050 appraisals were made—2,650 of these were done by fee appraisers. The remainder were done by staff appraisers of the Highway Division.

The Property Manager is charged with handling the disposition of property improvements prior to contracting either through public sales for the removal of such improvements or by demolition contracts. The total amount returned to the Highway Fund as a result of sales of buildings timber and surplus land, was approximately \$1,300,000. Lands which are not immediately needed for construction projects are rented by

the Property Manager. Rental income during the biennium was approximately \$975,000.

During the biennium, 3,150 people have been relocated from 1,130 dwelling units, and 48 businesses were relocated. Benefits in the amount of \$1,725,000 have been paid for relocation costs.

A liaison program between the field right-of-way forces and the field locating engineers is continuing. In order to ensure that all land service facilities are constructed only where there is a clear economic need, all real

property valuation data is supplied to the locating engineer by a liaison agent during the time of the field location survey. The engineer analyzes the data collected, and construction of land service facilities is recommended only where the estimated cost of such construction is less than the damage to property. In the event there is no economic justification to construct a land service facility but a property is actually damaged, then a damage payment to a grantor is made. By investigating land service justifications early, such as at the highway location stage, considerable time is saved during the later acquisition stage.

TRAFFIC ENGINEERING SECTION

The Traffic Engineering Section is responsible for the coordination, preparation, and review of investigations along with making recommendations on matters pertaining to traffic control. Traffic data such as accident records, traffic volumes, and vehicle speeds are used as a factual basis for the final recommendations.

During the biennium the Traffic Engineering Section continued with the analysis of motor vehicle traffic accidents on a statewide basis. An important function of accident analysis is locating high accident rate spots or sections on the highway system. High accident locations on the state system are investigated and improvements are made in an effort to alleviate the accident problem at these locations. Besides the detailed studies, accident summaries are prepared for distribution by the Motor Vehicle Division. Accident data are also furnished on a routine basis to 23 cities, 13 counties, and the State Police. In addition to the accident analysis work during the biennium, a report was prepared by a consultant in an effort to streamline and make more timely accident information readily available. Since the analysis of motor vehicle accidents is done on a statewide basis, implementation of the consultant's proposals will also be beneficial to the counties and cities in Oregon which utilize accident data.

The Traffic Survey unit compiles traffic volume information to determine the existing traffic patterns on the state highway system as well as the federal-aid secondary county system.

The traffic count data are based on 24-hour volume counts adjusted to represent the average daily traffic for the year. The adjustments are based on detailed and continuous traffic volume counts obtained at 110 permanent traffic recorder locations throughout the state.

Traffic volume data are used in planning for new construction as well as accident studies, taxation studies, and traffic control studies. Other studies conducted by the Traffic Survey unit include vehicle classification studies and truck weight studies.

Personnel from the Traffic Engineering Section conduct the requisite engineering investigations and make reports with recommendations for the establishment of speed zones, both for those established by the State Highway Commission and those which are the responsibility of the State Speed Control Board.

This section also constructs scale models of highway construction projects which are in the planning stage. These models are used in the study of proposed design and often times are beneficial in anticipating problems which may be encountered during the construction phase. As a result, appropriate measures may be taken ahead of time to eliminate the problems anticipated. The models present to the public an easily understood three-dimensional picture of highway plans. Numerous displays of the models have been arranged for public information. These

displays have continued to be very valuable as a good public relations media.

Preparation of preliminary plans for sign installations and final plans and specifications for traffic signal and other electrical traffic control devices is also the responsibility of the Traffic Engineering Section. During the biennium plans and specifications were prepared for 63 traffic signal projects.

There are currently several research projects being conducted in cooperation with the Federal Highway Administration. These projects involve fog visibility measures and measuring vehicle speed characteristics to determine the effects of signing systems as aids to drivers in adverse driving conditions. Much interest has been expressed nationally in regard to these research projects.

As a part of the federally sponsored TOPICS program (TRAFFIC OPERATIONS PROGRAM TO INCREASE CAPACITY AND SAFETY), areawide traffic operations studies and reports were completed for the cities of Ontario,

Pendleton, Baker, La Grande, Bend and Salem. Another such study is currently underway in the City of Astoria.



Mini park along the Stadium Freeway, I-405 in Portland



Interchange of the Pacific Highway, I-5 and East Portland Freeway, I-205

STATEWIDE DISTRIBUTION OF



Metolius River and Mt. Jefferson

HIGHWAY CONTRACT WORK



DISTRIBUTION OF HIGHWAY CONTRACT WORK

REGION

1971

1972



Scale in Miles

REGION I
STATE HIGHWAY CONSTRUCTION PROJECTS

<i>Route No.</i>	<i>Map Ref. No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Constr. Cost</i>	<i>No. of Contracts Awarded</i>
I-5	1	E. Portland Fwy.-Hubbard Intchge. & Stafford Road	Roadside Improvement & Illumination	\$ 209,000	2
I-5	2	Hubbard Intchge. Sec.	Grading, Paving, Structures & Roadside Improvement	4,217,000	2
I-205	3	S.E. Causey Ave.-Gladstone Intchge.	Grading, Paving & Structures	10,843,000	1
I-205	4	West Linn-Pacific Hwy.	Roadside Improvement & Illumination	932,000	6
I-80N	5	Sandy River-Multnomah Falls	Grading & Paving	4,297,000	1
US26	6	Mile Point 39.2	Slide Correction	164,000	1
US26	7	Wilson River Jct.-North Plains	Grading, Paving & Structures	3,267,000	1
US26	8	N.W. 185th Ave. Intchge.	Grading, Paving & Structure	1,246,000	1
US26	9	Cedar Hills Blvd. Intchge.	Roadside Improvement	70,000	1
US26	10	Sylvan Interchange	Structure & Signals	200,000	2
US26	11	Boring Road Intchge.	Grading, Paving & Structures	1,421,000	1
US30	12	Clatskanie-Lost Cr. Rd.	Paving	343,000	1
US30	13	Longview Intchge.	Culvert Replacement	64,000	1
US30	14	Columbia Co. Line-Burlington	Grading & Paving	3,931,000	1
US30	15	N.E. 122nd Ave.-N.E. 140th Ave.	Storm Sewer	177,000	1
ORE8	16	10th & Walnut St. (Hillsboro)	Signals	8,000	1
ORE8	17	Beaverton-S.W. 219th Ave.	Paving	254,000	1
ORE10	18	Lombard St.-Jamieson Rd. (Beaverton)	Grading, Paving & Signals	358,000	1
ORE10	19	Raleigh Hills-Hillsdale	Paving	69,000	1
ORE43	20	Riverside Canyon Bridge	Grading, Paving & Structure	247,000	1
ORE99E	21	S.E. Park Ave.-S.E. Ina Ave.	Paving	60,000	1
ORE208	22	Tualatin Valley Hwy.-Farmington Hwy. (Beaverton)	Signals	20,000	1
ORE211	23	Canyon Creek Bridge	Structure	100,000	1
ORE211	24	Clear Creek Bridge Sec.	Grading, Paving & Structure	175,000	1
ORE213	25	Abernethy Road Sec.	Signals & Channelization	40,000	1

STATE HIGHWAY CONSTRUCTION PROJECTS (Continued)

<i>Route No.</i>	<i>Map Ref. No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Constr. Cost</i>	<i>No. of Contracts Awarded</i>
ORE217	26	Walker Road Intchge. & Cedar Hills Intchge.-T.V. Hwy.	Grading, Paving, Structures Illumination	1,330,000	2
ORE217	27	Greenburg Road Intchge.	Grading, Paving & Structures	1,275,000	1
ORE224	28	Harmony Rd. Intchge.-Cascade Hwy.	Roadside Improvement	90,000	1
ORE224	29	Eagle Cr.-Estacada	Grading, Paving & Structure	3,092,000	1

TOPICS PROJECTS

<i>City</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Beaverton	Western Ave. at S.W. Allen Blvd.	Grading, Paving & Signals	\$77,000
Beaverton	S.W. Erickson Ave.-S.W. Main Ave. (S.W. 6th St.)	Grading & Paving	32,000
Forest Grove	Gales Cr. Rd. at "E" St. & Pacific Ave. at "B" St.	Grading, Paving, Signals & Illumination	50,000
Gladstone	S.E. McLoughlin Blvd. at S.E. Glen Echo Ave.	Signals	29,000
Gresham	Mt. Hood Hwy. at Hood Ave.	Signals	14,000
Lake Oswego	Bryant Road-State St.	Signals	71,000
Oregon City	Cascade Hwy. at Pearl St. and Warner-Milne Rd.	Signals	36,000
St. Helens	Columbia Blvd. at 18th and St. Helens Sts.	Illumination, Signing & Signals	36,000
Tigard	S.W. 72nd Ave.-S.W. Greenburg Rd. (Pacific Hwy. West)	Signals	27,000

COUNTY ROAD FEDERAL-AID SECONDARY PROJECTS

<i>FAS Route No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
CLACKAMAS COUNTY			
117	Airstrip Road-Pudding River Bridge	Grading & Paving	\$430,000
681	Country Club Road-Harvey Way	Grading & Paving	628,000

COUNTY ROAD FEDERAL-AID SECONDARY PROJECTS (Continued)

<i>FAS Route No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
COLUMBIA COUNTY			
574	Columbia R. Hwy.-Old Portland Rd.	Grading, Paving & Signals	200,000
612	Nehalem R. (Clear Creek) Br. Sec.	Grading, Paving & Structures	250,000
MULTNOMAH COUNTY			
639	Johnson Creek Bridge	Grading, Paving & Structure	107,000
646 & 954	S.E. 242nd Drive-S.E. Cochrane Rd.	Grading & Paving	330,000
730	N.E. 148th Ave.-N.E. 166th Ave.	Grading & Paving	318,000
730	N.E. 162nd Ave.-N.E. 181st Ave.	Storm Sewer	125,000
940	N. Borthwick Ave.-N. Woolsey Ave.	Grading & Paving	502,000
WASHINGTON COUNTY			
630	Farmington Road-Allen Ave.	Grading, Paving & Signals	417,000
630	S. Fork Beaverton Cr.	Culverts	40,000
950	Tualatin River (Schamberg) Bridge Sec.	Grading, Paving & Structure	308,000

SPECIAL \$250,000 CITY ALLOTMENT PROJECTS

<i>City</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Estacada (Currin St.)	Grading & Paving	\$17,000
North Plains (Commercial Ave.)	Grading & Paving	29,400

REGION I

Region 1 is centered at the northerly end of the Willamette Valley in the most populous section of the state. It reaches from the summit of the Cascade Range on the east to the foothills of the Coast Range on the west. The region includes all of Clackamas, Columbia, Multnomah, and Washington Counties. Construction activities within the Portland Urban limits are under the supervision of the Metropolitan Engineer.

Skiing in the Mt. Hood area, salmon and steelhead fishing on the Columbia and Willamette Rivers and their tributaries, and camping in the Cascade and Coast Ranges make this one of the finest year around recreation areas in the state.

The major portion of construction activities during this biennium was located in Clackamas County. The largest single accomplishment was the opening of the nine mile section of I-205 from I-5 to Oregon City. This section running through the easterly end of the Tualatin Valley,



Oregon City to Gladstone Section of I-205 in Clackamas County

was designed to follow the natural contours. Most of the highway has a wide separation with natural vegetation for screening between the opposing traffic lanes. Near the easterly end of this section is a beautiful Safety Rest Area overlooking the Willamette River and the falls at Oregon City.

The next section of I-205, from the easterly end of the Willamette River Bridge to Gladstone is presently under construction and is scheduled for completion in September, 1972.

The section of the Clackamas Highway from Harmony Road to the Cascade Highway was also completed during this biennium. Traffic may now move through the congested Milwaukie area with a minimum of delay.

Upgrading of Interstate 5 in Region 1 was started with the six lanes of reinforced concrete paving on the section from the Willamette River north to the I-205 interchange and the widening of the structures crossing the Willamette. The Highway Division was presented an Award of

Merit for 1971 by the Prestressed Concrete Institute for "Excellence in Architectural and Engineering Design" for the Stafford Road Interchange structure on this section of highway.

The remaining portion of the Beaverton-Tigard Highway (Oregon 217) from the Sunset Highway to Beaverton was opened late in 1971. This provides motorists with a 4-lane direct route from the Sunset Highway (US 26) to the Pacific Highway (I-5).

Completion of the Wilson River Highway-North Plains section of the Sunset Highway (US26) provides motorists with a 4-lane facility from Portland to the junction with the Wilson River Highway (Oregon 6).

In addition to these major projects there were eleven safety projects, including signalization, illumination and channelization, and four landscape projects completed during this biennium.

The four lane section of the Mt. Hood Highway from the end of the existing four lanes at Alder Creek to Wildwood is under construction and scheduled for completion in mid-July, 1972.

The Eagle Creek-Estacada section of the Clackamas Highway is scheduled for completion in October, 1972.

The first section of the Hubbard Interchange



Walker Road Interchange on the Beaverton-Tigard Highway ORE 217



Stafford Road Overcrossing of I-5 in Washington County

section on Interstate 5 was completed in August, 1971. The second section is scheduled for completion in July, 1972.

Also under construction and scheduled for completion in October, 1972, is the widening project on the Columbia Co. Line-Burlington section of the Lower Columbia River Highway (US30).

Contracts were also let for widening and upgrading of the Sandy River-Multnomah Falls section of I-80N, and for interchanges at N.W. 185th Ave. on the Sunset Highway, at Greenburg Road on the Beaverton-Tigard Highway, and at Boring Road on the Mt. Hood Highway.

There are 613 miles of highway to be maintained in Region 1 under the supervision of three District Engineers, stationed at Sylvan, Milwaukie and Portland. This includes 12 miles 6 lane Interstate, 42 miles 4 lane Interstate, 6 miles 6 lane primary, 136 miles 4 lane primary, 174 miles 2 lane primary, 19 miles 4 lane secondary and 224 miles 2 lane secondary. The District Engineers are also responsible for the maintenance of 364 bridges in the Region.

As the interstate system expands, highway maintenance becomes more complex and the requirement for specialization more important. In addition to the regular section crews, there are three sign crews, two electrical crews, two striping crews, one bridge crew and two

landscape crews in the Region. There are also two paving crews which operate from late spring to early fall. The service crews not only take care of routine maintenance throughout the region, but also assist the construction engineers. This work includes signal timing operations, temporary and permanent striping on construction projects, and road maintenance on construction projects which are shut down during the winter months.



Alder Creek Bridge on the Mt. Hood Highway US 26 in Clackamas County

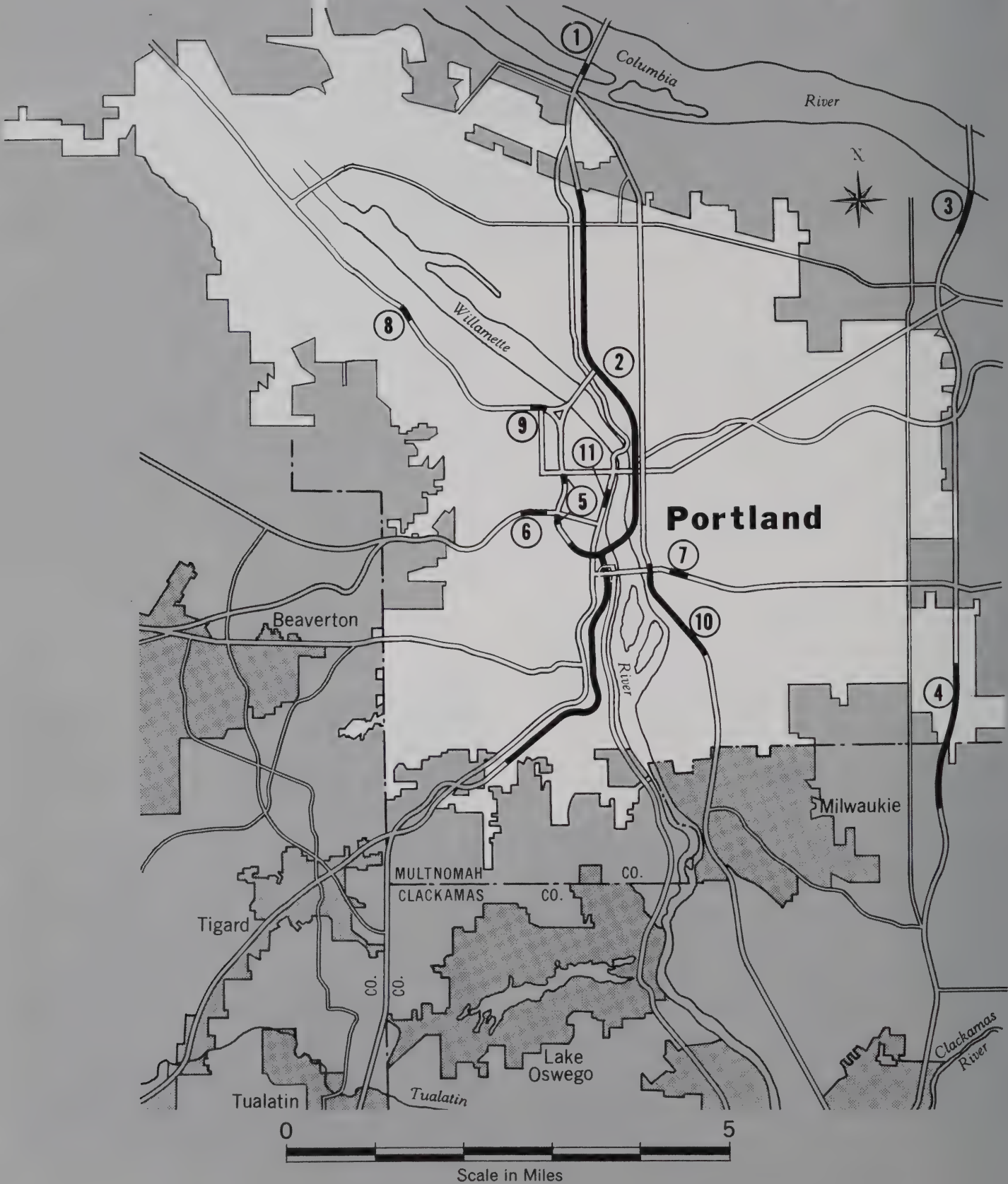
DISTRIBUTION OF HIGHWAY CONTRACT WORK

REGION

1971

1972

METROPOLITAN SECTION



METROPOLITAN SECTION

STATE HIGHWAY CONSTRUCTION PROJECTS

<i>Route No.</i>	<i>Map Ref. No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Constr. Cost</i>	<i>No. of Contracts Awarded</i>
I-5	1	Jantzen Beach Intchge.	Grading, Paving & Roadside Improvement	\$ 1,041,000	2
I-5 & I-405	2	N. Columbia Blvd.-Capitol Hwy.	Guardrail, Signing & Illumination	2,948,000	2
I-205	3	N.E. Marine Dr.-N.E. Holman St.	Clearing, Drainage & Demolition	263,000	1
I-205	4	S.E. Foster Rd.-S.E. Causey Ave.	Grading & Structures	10,000,000	1
I-405	5	S.W. Hall & S.W. Alder St.	Roadside Improvement	99,000	1
US26	6	Vista Ridge Tunnel Sec.	Roadside Improvement	66,000	1
US26	7	S.E. 17th & Powell Blvd. Sec.	Grading, Paving & Structure	3,150,000	1
US30	8	Kittridge Ave. (Portland)	Grading & Paving	202,000	1
US30	9	West Fremont Intchge. (Unit 2)	Grading, Paving & Structures	3,715,000	1
ORE99E	10	Ross Island Br.-Reedway St.	Grading, Paving, Signing & Roadside Improvement	1,677,000	3
ORE99W	11	Old Journal Bldg. Site	Roadside Improvement	45,000	1
I-5		Portland Section	Pavement Markers	125,000	1

TOPICS PROJECTS

<i>City</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Portland	Oswego Hwy. at Bancroft St.	Grading, Paving & Signals	\$ 74,000
Portland	S.E. 67th Ave.-S.E. 92nd Ave.	Signals	48,000
Portland	Unit "A", 13 Intersections	Signals	140,000
Portland	Unit "B", 8 Intersections	Signals	76,000
Portland	Unit "C", 8 Intersections	Signals	160,000

METROPOLITAN SECTION

The Metropolitan Section, created in 1958 to handle engineering on the urban freeway system in Portland, is a unique entity unlike the five regional offices. The Metropolitan Section has no

direct responsibility for maintenance but concerns itself primarily with new construction. The area under the Metropolitan Section's jurisdiction is not clearly defined, but all major freeway construction projects within the City of Portland and some which extend outside the city limits

are handled through this office, as are most widening projects, traffic signal installations and safety projects on state highways. Those projects outside the immediate urban area are supervised by the Region 1 office since Region 1 surrounds the Metropolitan area.

The personnel compliment in the Metropolitan Section includes three resident engineers, five resident bridge engineers and a locating engineer along with their crews. On the Metropolitan Engineer's staff are his two assistants, a design engineer, a utility engineer and the traffic engineer. A material inspector working out of the central laboratory is based at the Metropolitan headquarters to take care of sampling and inspection of all materials and a Right of Way Supervisor with his staff handles the enormous task of purchasing new right-of-way for the freeway construction program.

During the biennium the Metropolitan Section continued location and design work on the East Portland and Mt. Hood Freeways (I-205 and I-80N). Recent public awareness of environmental, ecological and social consideration has resulted in changing attitudes. The Metropolitan Section worked with consultants on two separate contracts aimed at designing freeways which would enhance the livability of the adjacent communities and at the same time provide facilities which would better serve the public. One study by a firm of sound consultants has resulted in design modifications to the East Portland Freeway intended to minimize noise radiated into the nearby schools and residential areas. A more comprehensive study was begun in the latter part of the biennium to explore multiple use and joint development on the Mt. Hood Freeway corridor with the aim of providing a basic design which will consider incorporating such things as parks, bicycle paths, mass transit lanes and other features which would make this more compatible with the affected area as well as to safely serve the motoring public. On the Mt. Hood Highway work also continued on location and design of the 17th and Powell railroad crossing project which is being contracted in cooperation with the city, county and railroad late in the biennium. Other location surveys included continuing work on McLoughlin Boulevard from S. E. Reedway Street to the Clackamas County line, several TOPICS projects to upgrade



Fremont Bridge construction over the Willamette River on I-405 in Portland

thoroughfares in the urban areas, a safety project on the northerly end of I-5 and work on the Industrial Freeway.

Construction projects totaling in excess of \$100,000,000 were underway during the biennium with ten contracts completed by January, 1972, at a cost of \$11,000,000 and an additional half dozen projects being completed during the following six months at a cost approaching \$22,000,000.

Completed were the Westbound Vista Ridge Tunnel and the Sunset Highway from the Vista Ridge Tunnels to Highlands Interchange bringing all the Canyon Road section of the Sunset Highway to full six-lane freeway standards. An industry award was received for the high quality of asphalt pavement on this project. Included in the Canyon Road project was a rock stabilization blanket designed to check slippage of the highway slopes adjacent to the Zoo-OMSI complex. McLoughlin Boulevard from the Ross Island Bridge to S. E. Reedway Street was opened to full six lanes on one contract and extensive signing and signal changes on the same section completed under a separate contract which included a sizable contribution from an abutting commercial establishment for a signal to alleviate a hazard from traffic to and from this business. The Jantzen Beach Interchange on I-5 at the Columbia River was reconstructed to Interstate standards and a traffic channelization project was completed on the Lower Columbia River Highway at Kittridge Avenue within



Center span assembly for the Fremont Bridge in Portland, I-405



Fremont Bridge I-405 and Interchange with I-5 in Portland

Portland.

Landscaping and roadside improvement projects in the Metropolitan Section included two mini-parks built adjacent to the Stadium Freeway, one on the site of the old Journal Building in downtown Portland, on Canyon Road west of the Vista Ridge Tunnels and at the Jantzen Beach Interchange of Interstate 5.

Projects to add safety features to existing facilities ranged from traffic signal contracts completed under the TOPICS program, an experimental impact attenuator project on I-5 and a large scale project also on I-5 which included the new type concrete median and shoulder barriers, guardrail, and a number of

water cell impact attenuators.

Late in the biennium the Metropolitan Section completed its first project on I-205, a small contract to clear right-of-way and stockpile topsoil in preparation for hydraulic filling on I-205 near the Columbia River. A large contract is currently underway on I-205 from Gladstone Interchange to S. E. Causey Avenue in S. E. Portland.

Design refinements have continued on I-205 following the design hearing held in September of 1970. As the biennium drew to a close, most of the design work had been completed and much of the right-of-way purchased.

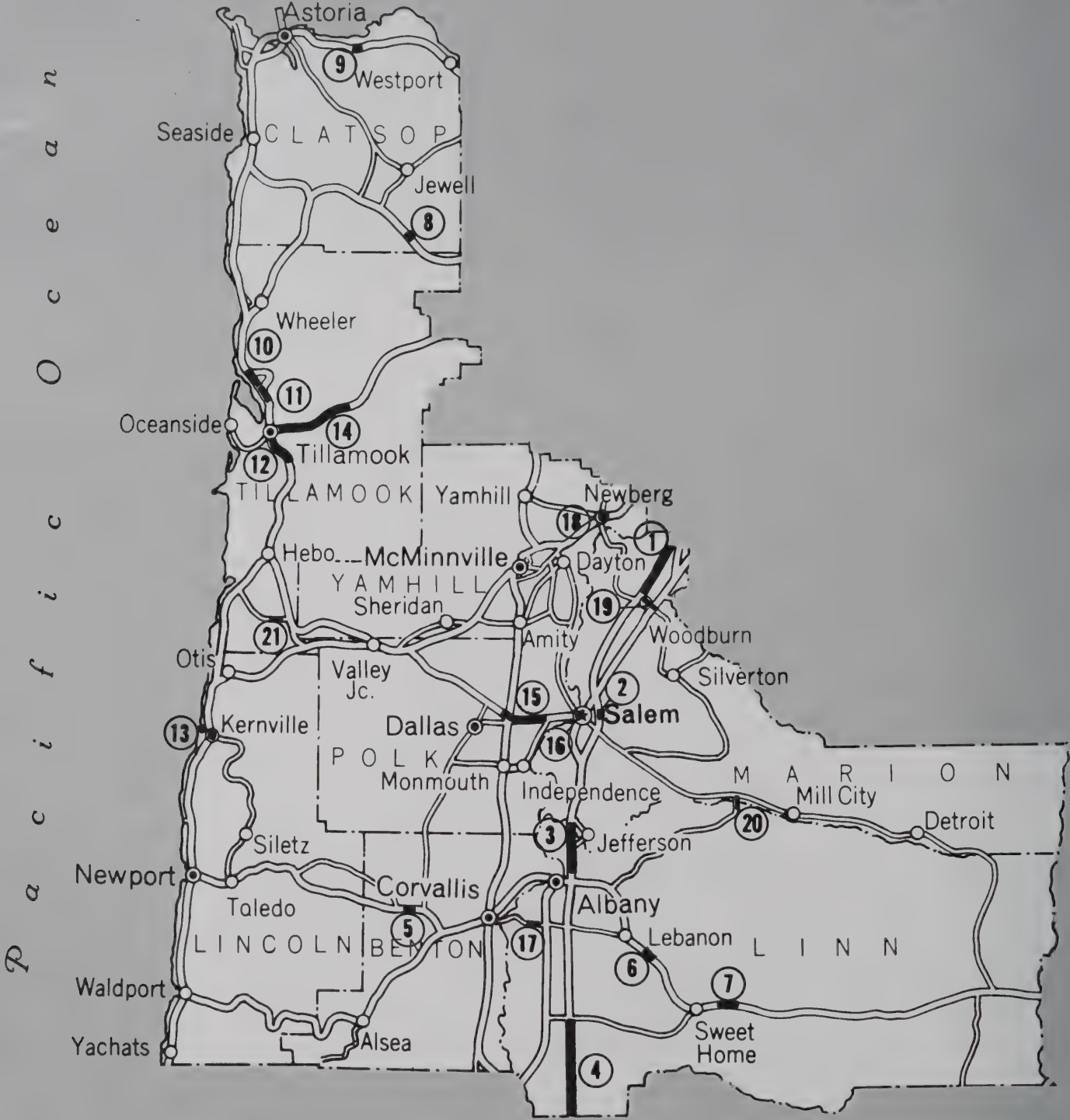
A training program for minority students initiated in 1969 was continued through the biennium with ten students from Jefferson High School participating on a one-day-a-week basis. These selected senior students are exposed to the various types of work common in the Highway Division and upon graduation will be eligible for summer employment in the engineering field. Some participants from previous years have gone on to college but returned to work for the Highway Division during the summer months. In addition, the Metropolitan Section has had two high school students working under the Neighborhood Youth Corps program. This program is aimed more at work opportunity than at training and it provides the students with an opportunity to gain on-the-job experience while performing useful work for the Highway Division.



Jantzen Beach Interchange on I-5 in north Portland

DISTRIBUTION OF HIGHWAY CONTRACT WORK

REGION 2
1971
1972



0 5 20 50
Scale in Miles

REGION II
STATE HIGHWAY CONSTRUCTION PROJECTS

<i>Route No.</i>	<i>Map Ref. No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Constr. Cost</i>	<i>No. of Contracts Awarded</i>
I-5	1	Hubbard Intchge.-Woodburn Intchge.	Grading, Paving & Structures	\$11,429,000	1
I-5	2	Market Street Intchge.	Signing & Illumination	30,000	1
I-5	3	Talbot Rd.-N. Albany Intchge.	Roadside Improvement	74,000	1
I-5	4	Halsey Intchge.-Lane Co. Line	Grading, Paving & Structure	4,764,000	1
US20	5	Gellatly Summit Section	Grading & Paving	1,221,000	1
US20	6	Sodaville Rd.-Vail Cr.	Grading & Paving	1,100,000	1
US20	7	Foster-Hufford Road	Paving	125,000	1
US26	8	Sunset Safety Rest Area	Facilities	386,000	1
US30	9	Fern Hill Section	Slide Correction	267,000	1
US101	10	Barview-Garibaldi	Paving	153,000	1
US101	11	Garibaldi-Bay City	Paving	170,000	1
US101	12	Tillamook-Simmons Cr.	Paving	219,000	1
US101	13	Siletz River (Kernville) Br. Section	Grading, Paving & Structure	4,998,000	1
ORE6	14	Tillamook-Deadman Cr.	Paving	436,000	1
ORE22	15	Rickreall-Independence Jct.	Grading, Paving & Structures	5,000,000	1
ORE22	16	Center Street (Salem) Br.	Repairs & Painting	311,000	1
ORE34	17	Orleans Road-Lake Creek	Grading, Paving & Structures	2,412,000	1
ORE99W	18	Villa Rd. (Newberg)	Signals	21,000	1
ORE214	19	Boones Ferry Rd.-Pacific Hwy. East	Grading, Paving & Structures	1,300,000	1
ORE226	20	Mehama Bridge Sec.	Grading, Paving & Structure	872,000	1
State 130	21	Little Nestucca R. (Meador) Br. Sec.	Grading, Paving & Structure	255,000	1

TOPICS PROJECTS

<i>City</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Albany	Vine St.-Ferry St. (Queen Ave. & S. Pacific Blvd.)	Grading, Paving & Signals	\$171,000
Astoria	9th St.-14th St. (Columbia River Hwy.)	Signals	82,000
Corvallis	N.W. Circle Blvd.-N.W. Spruce Ave. (Ninth St.)	Grading, Paving & Signals	50,000
Corvallis	N.W. Walnut Blvd.-N.W. Taft Ave. (N.W. 29th St.)	Grading & Paving	54,000

TOPICS PROJECTS (Continued)

<i>City</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Lebanon	Oak St. at 2nd St. & Park St. and Grant St. at Williams St.	Signals	34,000
McMinnville	2nd St.-3rd St. (Pacific Hwy. West)	Signals	34,000
Newport	Oregon Coast Hwy. at Olive St.	Signals	14,000
Salem	Mission St. at 25th St.	Grading & Paving	416,000

COUNTY ROAD FEDERAL-AID SECONDARY PROJECTS

<i>FAS Route No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
CLATSOP COUNTY			
608	Thompson Falls (MP 12.4) Sec.	Slide Correction	\$ 25,000
912	Humbug Creek Bridge Sec.	Grading, Paving & Structure	120,000
LINN COUNTY			
773	3rd St.-7th St. (Harrisburg)	Grading, Paving & Signals	164,000
LINN & MARION COUNTIES			
126	N. Santiam R. (Greens) Br. Sec.	Grading, Paving & Structure	450,000
MARION COUNTY			
159	Trail Ave.-Chemawa Road	Grading & Paving	431,000
159	Wheatland Rd.-Trail Ave.	Grading & Paving	289,000
POLK COUNTY			
209	Ward Rd.-Polk Co. Line	Grading & Paving	400,000
TILLAMOOK COUNTY			
613	Nestucca R. (Ollie Woods) Bridge	Structure	289,000
616	Cape Meares-Lighthouse	Slide Correction	85,000

SPECIAL \$250,000 CITY ALLOTMENT PROJECTS

<i>City</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Clatskanie (Nehalem St.)	Grading & Paving	\$31,000
Falls City (Chamberlin St.)	Grading & Paving	19,000

SPECIAL \$250,000 CITY ALLOTMENT PROJECTS (Continued)

<i>City</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Jefferson (Church St.)	Grading & Paving	20,000
Mt. Angel (Garfield St.)	Grading & Paving	36,000
Philomath (N. 9th St.)	Grading & Paving	27,000
Scio (N.W. 1st Ave.)	Grading & Paving	23,000
Silverton (South St.)	Grading & Paving	28,000
Stayton (Locust St.)	Grading & Paving	40,000



New and old bridges across the Willamette River at Albany form a one-way couplet on US 20

REGION II

Region II comprises the northwest portion of the state except for the City of Portland and its surrounding communities. This region includes 192 miles of the Oregon Coast Highway; a corresponding amount of Pacific Ocean shoreline with its attractive sandy beaches, headlands and bays outline the westerly edge. In this belt are thirty state parks and recreation areas, of which nine offer overnight accommodations.

These attractions, augmented by county and federal parks, attract large numbers of people from the metropolitan areas of Portland, Salem, Eugene, and the central Willamette Valley, as well as out-of-state visitors. There are portions of six primary highways leading to the coast from the Willamette Valley to serve heavy summer seasonal recreational traffic.

The eastern portion of the region contains sections of the scenic North and South Santiam Highways. In this area, parks, lakes, mountain camps and trails attract tourists in the summer, while in the winter the great attraction is snow sports.

The central portion includes the Salem, Albany and Corvallis population centers. This portion is served by the heavily traveled Pacific, Pacific East and Pacific West Highways. Seventy-four miles of Interstate 5 (Pacific Highway) traverses Region II from north to south.

Although the above emphasizes recreational activities, this region contains a sizable portion of other leading occupational activities, such as logging, manufacturing of timber products, farming, and food processing. All of these activities cause seasonal fluctuations in traffic volumes. The greater volume occurs in the summer season with its inherent traffic problems.

The new safety programs and the reconstruction of portions of the interstate highway not constructed with interstate funds are creating a surge in heavy construction activities. During the biennium the major state highway construction in Region II totaled approximately \$18,720,000. The County Federal-Aid Secondary Program amounted to \$1,403,000. Also completed were special city allotments and TOPICS projects which resulted in the

expenditure of \$624,000 within the cities of Region II.

One of the major concerns for Region II was a major earthslide at Fern Hill, east of Astoria. It was active late in 1970 and again early in 1971. The moving mass was over 4,000' in length and of great depth. The Highway Division hired consultants, to analyze and recommend solutions to the problem. Parts of the railroad tracks were shifted at the toe of the slide as well as the existing Lower Columbia River Highway.



Realignment of US 20 between Philomath and Blodgett

On the Oregon Coast Highway near Kernville, the replacement of the existing narrow bridge is being undertaken in a \$5,000,000 structural contract. This work will greatly alleviate the traffic problems on a narrow antiquated bridge.

The I-5 projects at the north boundary of the region that will ultimately six-lane the Pacific Highway from Portland to Salem began in

February, 1972. This six-laning will facilitate the movement of the ever-increasing traffic load on the interstate highway system. Continuing safety projects in the future will improve the entire stretch of I-5 within the confines of Region II.

Continued emphasis is given to the overlaying of existing highways many of which being used today have been in service for thirty to forty years. Small safety improvements such as installation of traffic lights is a continuing program as changing traffic patterns due to shopping centers and new subdivisions develop.



New bridge construction over the North Santiam River at Mehama on ORE 226

Negotiated contracts for overlays on the Salmon River Highway, the Oregon Coast Highway and, in various parts of the Salem area, were constructed during this period. Under the maintenance program left-turn refuges to alleviate traffic conditions were completed in both Salem and Albany areas. Minor slides were corrected on the Oregon Coast, Santiam, and North Santiam Highways by maintenance forces. Flood damage

occurred in the winter of 1971 and 1972, particularly hard hit was the Tillamook County area. Extreme damage resulted from creek washes and flooded culverts. The region lost one bridge on the Albany-Lyons Highway due to tremendous pressures created by debris catching on the Thomas Creek structure four miles north of Scio.

Over and above the duties of keeping the highways open, the maintenance forces continued minor betterment activities by constructing climbing lanes, left-turn refuges, and passing bays throughout the region along with cooperative projects within the cities of Carlton, Philomath, Toledo, and Newport.

Maintenance forces also began construction of the bicycle paths in Salem, Seaside, Albany, and the Monmouth-Independence area.

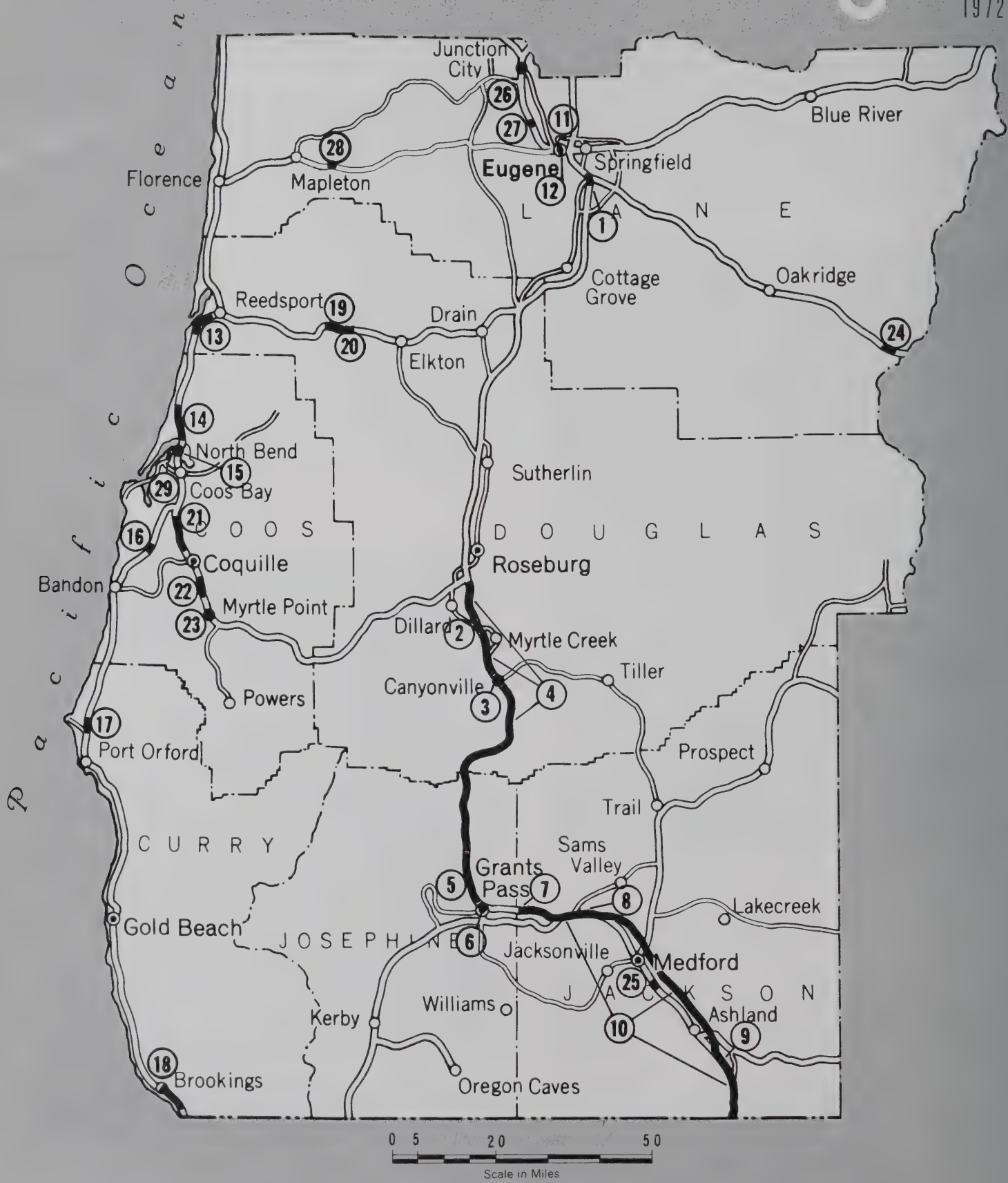
One of the projects which Region II was proud to complete was the construction of the Sunset Safety Rest Area and dedication on September 23, 1971 to the men of the Sunset Division.



New construction and realignment of US 20 west of Blodgett

DISTRIBUTION OF HIGHWAY CONTRACT WORK

REGION 3
1971
1972



REGION III
STATE HIGHWAY CONSTRUCTION PROJECTS

<i>Route No.</i>	<i>Map Ref. No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Constr. Cost</i>	<i>No. of Contracts Awarded</i>
I-5	1	S.P.R.R. O'xing (Goshen) Sec.	Grading, Paving & Structure	\$1,138,000	1
I-5	2	Myrtle Creek Intchge.	Sign & Illumination	87,000	1
I-5	3	Canyonville Intchge.	Illumination	40,000	1
I-5	4	Garbage Dump Rd.-Jumpoff Joe Cr.	Guardrail, Sign & Safety Work	700,000	1
I-5	5	Jumpoff Joe Cr.-Grants Pass	Grading, Paving & Structures	3,222,000	1
I-5	6	6th St. at Morgan Lane (Grants Pass)	Signals	22,000	1
I-5	7	Rogue River Intchge. Sec.	Grading & Illumination	143,000	1
I-5	8	S. Gold Hill Intchge. Sec.	Grading, Paving & Structure	332,000	1
I-5	9	Neil Creek Section	Slide Correction	1,401,000	1
I-5	10	Valley of the Rogue Park Intchge.- Calif. State Line	Guardrail & Attenuators	879,000	1
I-105	11	Country Club Road Intchge.	Signals	19,000	1
I-105	12	Seventh St.-Willamette River	Grading, Paving & Structures	7,729,000	1
US101	13	Reedsport-Clear Lake	Paving	253,000	1
US101	14	Hauser-Coos Bay	Paving	203,000	1
US101	15	Railroad Ave. at Newmark St. (North Bend)	Signals	25,000	1
US101	16	Beaver Hill Fill Sec.	Slide Correction	102,000	1
US101	17	Sixes River Section	Grading, Paving & Structures	1,877,000	1
US101	18	Brookings-Winchuck River	Grading, Paving & Structure	6,559,000	1
ORE38	19	Grabb Cr.-Bunches Curve	Paving	345,000	1
ORE38	20	Sawyers Rapids & Elkton Sections	Slide Correction	308,000	1
ORE42	21	Green Acres Rd.-China Camp Marsh	Paving	269,000	1
ORE42	22	Gray Cr.-N. Fork Coquille River	Grading & Paving	2,036,000	1
ORE42	23	8th & Harris Sts. (Myrtle Point)	Signals	10,000	1
ORE58	24	Salt Creek Section	Slide Correction	196,000	1
ORE99	25	5th St.-Oak St. (Phoenix) Sec.	Grading & Paving	180,000	1
ORE99W	26	Ivy St. at 6th Ave. (Junction City)	Signals	21,000	1
ORE99W	27	Eugene (Blue Star) Rest Area	Improvement	70,000	1
ORE126	28	Knowles Cr. Tunnel Sec.	Tunnel Lining & Illumination	918,000	1
State240	29	Fir St.-Lewis St. (North Bend)	Grading & Paving	361,000	1

TOPICS PROJECTS

<i>City</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Coos Bay	Wasson Ave., 10th St. and Market	Signals	\$ 51,000
Eugene	Pac. Hwy. W. at Roosevelt Blvd. & Prairie Road	Signals & Channelization	222,000
Eugene	Garfield St.-High St. (Pacific Hwy. West)	Signals	105,000
Medford	6th St.-Stewart Ave.	Signals	70,000
Medford	Biddle Road-Crater Lake Ave.	Signals	33,000
North Bend	Newmark St.-S. City Limits (Broadway St.)	Grading & Paving	55,000
Roseburg	Stephens St. at Garden Valley Blvd.	Grading, Paving & Signals	55,000
Springfield	Mohawk Rd.-"I" Street (Mohawk Blvd.)	Grading, Paving & Signals	172,000

COUNTY ROAD FEDERAL-AID SECONDARY PROJECTS

<i>FAS Route No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
DOUGLAS COUNTY			
241	South Umpqua River (Oak St.) Bridge	Structure	\$ 706,000
JACKSON COUNTY			
15-107	Airport Rd.-Hilton Rd.	Grading & Paving	692,000
JOSEPHINE COUNTY			
17-102	Jumpoff Joe Cr.-Louse Cr.	Grading & Paving	857,000
LANE COUNTY			
860	Pacific Hwy. West-N.W. Expressway	Structures	1,416,000

SPECIAL \$250,000 CITY ALLOTMENT PROJECTS

<i>City</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Coquille (5th St.)	Paving	\$44,000
Powers (Spruce St.)	Grading & Paving	28,000
Veneta (Fifth St.)	Grading & Paving	25,000



Bridge construction at Brookings over the Chetco River on US 101

REGION III

Region III is located in the southwest portion of the state and includes all of Coos, Curry, Douglas, Lane, Josephine, and Jackson counties. This portion of the state consists mostly of forested hills and mountains interlaced with areas of farmlands along the many streams and rivers. The industry of the region is oriented toward lumbering, agriculture and tourism.

Approximately two-thirds of Interstate 5 is within Region III. Ten contracts were awarded and completed on this highway during the biennium. The work covered grading, paving, safety improvements, illumination, rock production and rest area improvements. Emphasis was on safety improvement and included projects

from Sutherlin Interchange to Grave Creek, Rock Point to Seven Oaks and Jumpoff Joe Creek to Grants Pass.

The Eugene Blue Star Rest Area, located just north of Eugene on ORE99, was improved and complete rest stop facilities are now available at this location. Other work on ORE99 included overlaying and widening from Winston to 3.5 miles south of Dillard and installing traffic signals at 6th and Ivy Street in Junction City.

A bond issue passed by the Oregon Legislature provided funding for the Brookings-Winchuck River project on ORE101. This project consisted of widening and realigning 4.5 miles of roadway; 1.0 mile of which follows a new more direct alignment. Also included was the replacement of

a narrow two-lane truss bridge across the Chetco River with a four-lane post-tension concrete structure. Another project on ORE101, this one in the vicinity of Sixes River, was completed during the biennium. Here an improvement was achieved by replacing a narrow twisting alignment with a wider gently curving roadway.

An estimated \$1,250,000 was spent on the many state parks, waysides and safety rest areas along the Oregon Coast. The expenditure greatly improved these facilities and measurably increases the tourism and recreational potential of the coast area.

Two projects were completed on US126. The Knowles Creek Tunnel was relined and illuminated and the covered bridge across the Siuslaw River at Florence was replaced with a prestress concrete structure. Both projects eliminated outdated facilities with roadways that are safer and more pleasant to drive.

With the completion of the Grey Creek-North Fork Coquille River Section on ORE42 there is



Four-lane section of recently improved Cape Arago Highway near North Bend in Coos County

now a four-lane highway from Coquille to Myrtle Point, a distance of 10.5 miles. Two other projects were completed on ORE42. These consisted of widening and overlaying the existing roadway from Shields Creek to Winston and from Green Acres to China Camp.

Also completed during the biennium was a



Safety improvement of I-5 north of Grants Pass near the Manzanita Rest Area

widening and overlay project, from Grubb Creek to Bunches Curve on the Umpqua Highway, ORE38.

On the highways connecting the Oregon coast ports with the interior valleys, a significant increase in truck traffic has occurred. The above overlaying and widening projects were completed to keep pace with this increased use of the highways at a minimum expenditure.

Two projects were completed in the North Bend-Coos Bay area. These consisted of replacing existing two-lane roadways with four-lane facilities and traffic signals where warranted. The sections



Newly completed bridge over the Siuslaw River at Mapleton on ORE 126



Improvements continue on ORE 42 between Coquille and Myrtle Point with completion of this 4-lane structure over the N. Fork Coquille River

improved are from Fir Street to Lewis Street in North Bend on the Cape Arago Highway and from Woodland Drive to Central Avenue in Coos Bay on the Empire-Coos Bay Highway.

Five County Road Federal-Aid Secondary Projects located in Lane, Douglas, Josephine, and Jackson counties were completed during this biennium. Most notable were the Belt Line Road-Pacific Highway West Interchange project in Lane County; the Oak Avenue Bridge spanning the South Umpqua River in Roseburg; the Jumpoff Joe Creek to Louse Creek Interchange project in Josephine County and the Airport Road to Hilton Road project in Jackson County.



Knowles Creek Tunnel on the Florence-Eugene Highway ORE 126

The following "TOPICS" projects were completed in Region III during this biennium: Stephens Street and Garden Valley Blvd. in Roseburg; 6th and Stewart Avenue in Medford; intersections of Roosevelt Blvd. and Prairie Road with Pacific Highway West in Eugene; Biddle Road and Crater Lake Avenue in Medford; and Mohawk Road and "I" Street in Springfield.

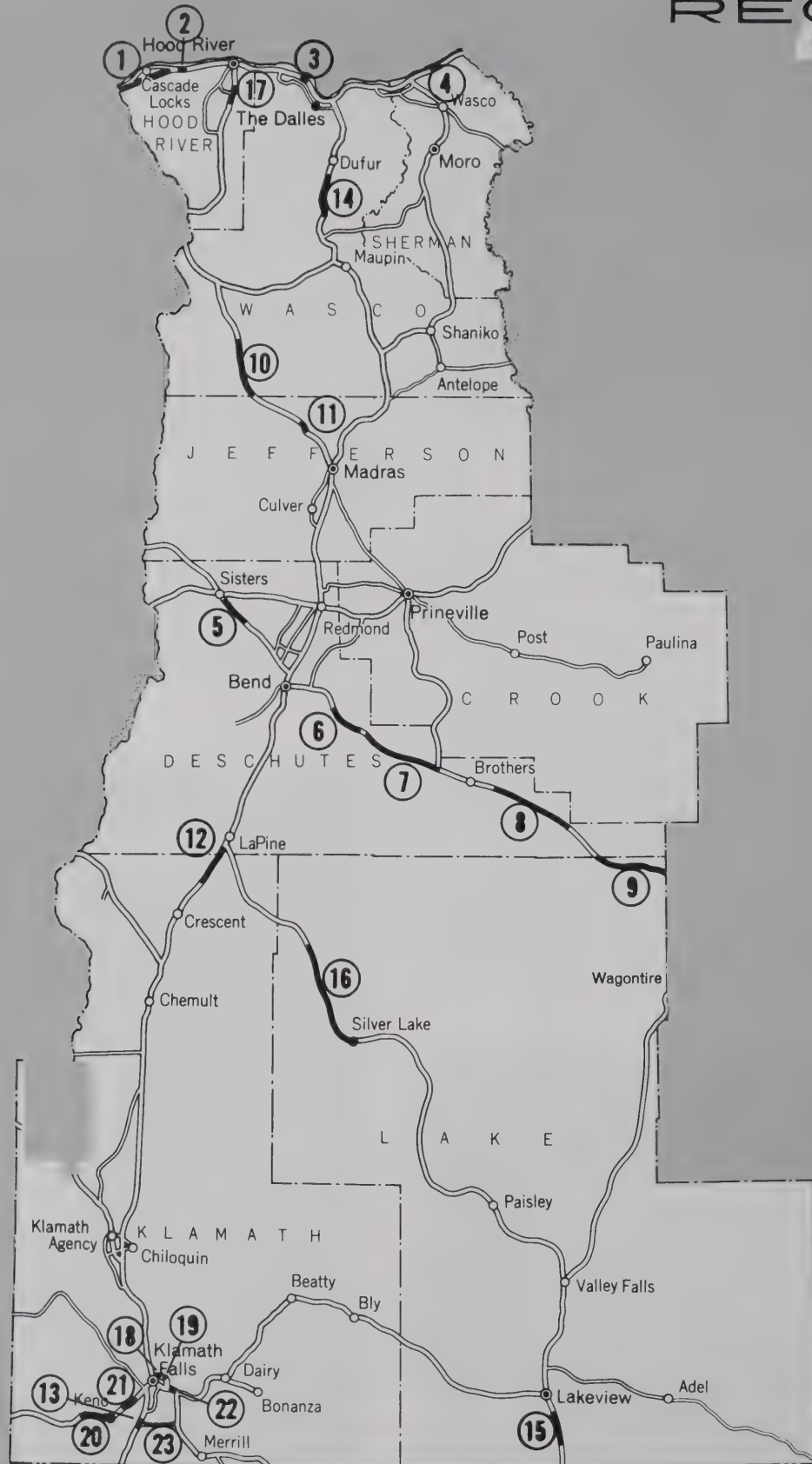
Besides the construction work which provides needed major improvements to the highway system, a continuous and necessary effort is expended on maintaining these roadways and providing minor improvements. The maintenance of highways continued to grow each year due to the increasing traffic load and increase in total lane miles to be maintained. Also, each year's increase in traffic has required more and more channelized intersections. In many cases, maintenance forces have added acceleration lanes to facilitate traffic. Other intersections have required full channelization including left-turn refuge lanes and thru lanes. This treatment permits smooth, safe movement of traffic at important interchanges.



Structure widening on I-5 near Goshen in Lane County

DISTRIBUTION OF HIGHWAY CONTRACT WORK

REGION
4
1971
1972



REGION IV
STATE HIGHWAY CONSTRUCTION PROJECTS

<i>Route No.</i>	<i>Map Ref. No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Constr. Cost</i>	<i>No. of Contracts Awarded</i>
I-80N	1	Multnomah Co. Line-East Cascade Locks	Pavement Seal	\$ 121,000	1
I-80N	2	Fountain Slide Section	Slide Correction	2,500,000	1
I-80N	3	Memaloose Safety Rest Area	Wells	18,000	1
I-80N	4	Rufus Interchange	Illumination	44,000	1
US20	5	Squaw Cr.-Cloverdale Rd.	Paving	298,000	1
US20	6	Arnold Ice Cave Rd.-Horse Ridge	Grading & Paving	1,450,000	1
US20	7	Fort Rock Rd.-Crooked River Hwy.	Paving	424,000	1
US20	8	Fredrick Butte Rd.-Hampton	Paving	593,000	1
US20	9	Deschutes Co. Line-Harney Co. Line	Paving	623,000	1
US26	10	Simnasho Rd.-Jefferson Co. Line	Paving	382,000	1
US26	11	Deschutes River-Pelton Dam	Grading & Paving	424,000	1
US97	12	Fremont Hwy. Jct.-Deschutes National Forest	Paving	256,000	1
US97	13	Midland Information Center	Roadside Improvement	148,000	1
US197	14	Gap-Tygh Grade Summit	Grading, Paving & Structure	1,901,000	1
US395	15	Crane Cr.-Cogswell Cr.	Grading & Paving	1,011,000	1
ORE31	16	Shevlin Camp Road-Silver Lake	Paving	931,000	1
ORE35	17	Willow Flat Rd.-Fikes Corner	Grading, Paving & Structure	1,377,000	1
ORE39	18	Alameda Ave. at Esplanade St.	Signals	20,000	1
ORE39	19	Esplanade St.-Ft. Klamath Rd.	Roadside Improvement	20,000	1
ORE66	20	Klamath River-Keno	Paving	192,000	1
ORE66	21	Weyerhaeuser Road Sec.	Grading & Paving	290,000	1
ORE140	22	Patterson St.-Malin Jct.	Grading & Paving	898,000	1
State 423	23	Lower Klamath Lake Sec.	Paving	210,000	1



New state park facilities under construction at Goose Lake Recreation Area on US 395 south of Lakeview

TOPICS PROJECTS

<i>City</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Bend	S. 3rd St. at Wilson Ave. (The Dalles-Calif. Hwy.)	Signals	\$18,000
Bend	Hill St. at Portland Ave.	Grading & Paving	25,000
Klamath Falls	Washburn Way at Shasta Way & K. Falls-Malin Hwy. at Main St.	Signals	57,000

COUNTY ROAD FEDERAL-AID SECONDARY PROJECTS

<i>FAS Route No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
DESCHUTES COUNTY			
325	Pilot Butte Canal (Deschutes Sta.) Br.	\$ Structure	\$ 37,000
780	N. Unit Main Canal (Lambert) Br.	Structure	35,000
946	Deschutes River (Tumalo) Br. Sec.	Grading, Paving & Structure	127,000
HOOD RIVER COUNTY			
349	U.P.R.R. O'xing Hood River (Button) Br. Sec.	Grading, Paving & Structure	800,000
JEFFERSON COUNTY			
660	Deschutes River Canyon Sec.	Grading & Paving	259,000
KLAMATH COUNTY			
415	Esplanade St.-Ft. Klamath Road	Grading & Paving	423,000
LAKE COUNTY			
902	Twenty Mile Creek Bridge	Structure	44,000
WASCO COUNTY			
949	Juniper Flat	Grading & Base	194,000

SPECIAL \$250,000 CITY ALLOTMENT PROJECTS

<i>City</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Chiloquin (2nd Ave.)	Paving	\$25,000
Lakeview ("J" St. N.)	Paving	23,000

REGION IV

Region IV is situated in the central portion of the state, and includes three state administrative districts - 9, 10 and 11. District 9 encompasses Hood River, Wasco and Sherman Counties. The land is as varied as the terrain with lumbering, rolling wheat fields and fruit growing being the primary crops. District 10 harnesses Jefferson, Crook and Deschutes Counties whose main industries are lumbering, tourism and agriculture. Recreation is rapidly growing both winter and summer with skiing, snmobiling, water skiing, fishing, hunting and rock hounding being paramount. District 11 is comprised of Klamath and Lake Counties. These counties have lumbering, agriculture and cattle ranching as the main industries and are noted for recreation. Large herds of antelope are found in the southeast portion of Lake County. Skiing, fishing, and hunting are very popular and some very beautiful lakes are in the area.

These three districts stretch from Washington to the California and Nevada state lines. A complete change of scenery can be had by a short ride in any direction.

Construction activities during the biennium include the expansion of State parks and rest areas. The construction of an extension to Cove Palisades State Park was completed in the spring of this year providing for a wonderful summer for a greater number of families. All summer long the park was full of water skiers, fishermen, boats and people just relaxing. In addition, work was completed on the Midland Information Center south of Klamath Falls on Highway 97 to provide a place for travelers to relax and receive travel information.

Other projects constructed during the biennium include the grading and paving of Gap-Tygh Grade Summit Section located about 16 miles south of The Dalles on Highway 197. The



Slide removal on the Lake of the Woods Highway ORE 140. Slide occurred during heavy rainfall in January 1972.



Fremont Highway ORE 31 reconstruction northwest of Silver Lake in Lake County



Midland Travel Information Center on The Dalles-California Highway US 97 near the Oregon-California State Line



Patterson Street-Malin Junction Section on the Klamath Falls-Lakeview Highway, ORE140

completed project which is 7.07 miles in length now provides a modern highway from The Dalles to Wapinitia Junction with unsurpassed scenic areas.

The expansion and rapid growth of our communities has made it necessary to widen city streets and install traffic signals to provide better service to the traveling public. Traffic signal projects throughout the Region were Alameda Avenue at Esplanade Street, South 6th at Austin Street in Klamath Falls, West Deer Street-East Elm Street in the City of Prineville and 3rd and Wilson Streets in Bend.

With increased traffic wear and severe climatic conditions, sections of highways need resurfacing. Overlay contracts were completed from Multnomah County line to East Cascade Locks on I-80N, Columbia River Highway, the Warm Springs Highway from Simnasho Road to Jefferson County line, US 97 from Fremont Junction to Deschutes National Forest, and from Camp Shevlin to Silver Lake on the Fremont Highway.

In addition to the construction activities, the regional engineer is responsible for the maintenance of 4,500 lane miles of state highway. Assistance is provided by a staff of 3 district engineers, 21 maintenance crews, 2 bridge crews, 3 sign crews and 3 extra gang crews. During the winter of 1971-1972, record snowfalls were recorded in the Cascades and extraordinary effort was required to keep all highways open and properly maintained.

While not engaged in maintenance activities, the maintenance crews were busy with various betterment projects. Accomplishments for this biennium includes construction of six miles of passing lanes, 95 miles of widened shoulders, twelve turnouts for slow moving vehicles and four left turn channelizations. Safety projects include removal or correction of 35 roadside obstacles and widening of four dangerously narrow bridges.

A greater effort has been placed on roadside cleanup and maintenance of litter barrels. The youth litter program involved employment of 12 high school students to pick up roadside litter in the summer in a never ending battle to keep ahead of the litterers.



Highway reconstruction south of Lakeview on US 395



Summer youth litter patrol used to fight the increasing roadside litter problems

1972



REGION V
STATE HIGHWAY CONSTRUCTION PROJECTS

<i>Route No.</i>	<i>Map Ref. No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Constr. Cost</i>	<i>No. of Contracts Awarded</i>
I-80N	1	Arlington Interchange	Roadside Improvement	\$ 64,000	1
I-80N	2	East Unit, Pendleton-Emigrant Hill	Grading, Paving & Structures	7,635,000	2
I-80N	3	Deadmans Pass Safety Rest Area	Facilities	841,000	1
I-80N	4	Meacham-Hilgard	Grading & Paving	4,733,000	1
I-80N	5	LaGrande (UPRR) Sec.	Grading, Paving & Structure	621,000	1
I-80N	6	LaGrande-Ladd Canyon	Grading, Paving & Structures	11,633,000	2
I-80N	7	N. Powder-S. Baker Intchge.	Grading, Paving & Structures	21,475,000	4
I-80N	8	Nelson Point-Lime	Median Barrier	565,000	1
I-80N	9	Olds Ferry-N. Ontario Intchge.	Grading, Paving & Structures	15,413,000	2
I-80N	10	Ontario Safety Rest Area	Facilities	651,000	1
US20	11	Chickahominy Cr.-Sagehen Summit	Paving	634,000	1
US95	12	Sheaville-Jordon Valley	Grading & Paving	382,000	1
US95	13	M.P. 85.5-Blue Mountain Pass	Grading & Paving	776,000	1
US395	14	Emigrant-Frazier (Pendleton) Couplet	Grading & Paving	924,000	1
US395	15	Forest Boundary-Little Beech Cr.	Grading, Oiling & Structure	1,525,000	1
ORE19	16	S. Unit, Condon-Thirty Mile Cr.	Grading, Oiling & Structure	1,982,000	1
ORE32	17	Hermiston Section	Grading & Paving	397,000	1
ORE74	18	Pieper Canyon Rd.-Bunker Hill Road	Grading, Paving & Structures	537,000	1
ORE78	19	S. Unit, Burns-Lawen	Grading & Paving	327,000	1
ORE82	20	Willow Creek Bridge Sec.	Structure	140,000	1
ORE86	21	Baker-Waterspout Cr.	Paving	506,000	1
ORE201 (Parma Spur)	22	Snake River (Adrian) Br. Sec.	Grading, Paving & Structure	1,050,000	1
I-80N		Arlington, LaGrande & Lime Sections	Pneumatic Applied Mortar	70,000	1

TOPICS PROJECTS

<i>City</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Baker	4th St.-Estes Ave. (LaGrande-Baker & Baker-Unity Hwys.)	Grading, Paving & Signals	\$ 80,000

TOPICS PROJECTS (Continued)

<i>City</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
LaGrande	2nd St.-Spruce St. (LaGrande-Baker Hwy.)	Signals & Signs	35,000
Ontario	S.W. 3rd Ave.-S.W. 4th Ave. (S.W. 9th St.)	Grading, Paving & Signals	56,000

COUNTY ROAD FEDERAL-AID SECONDARY PROJECTS

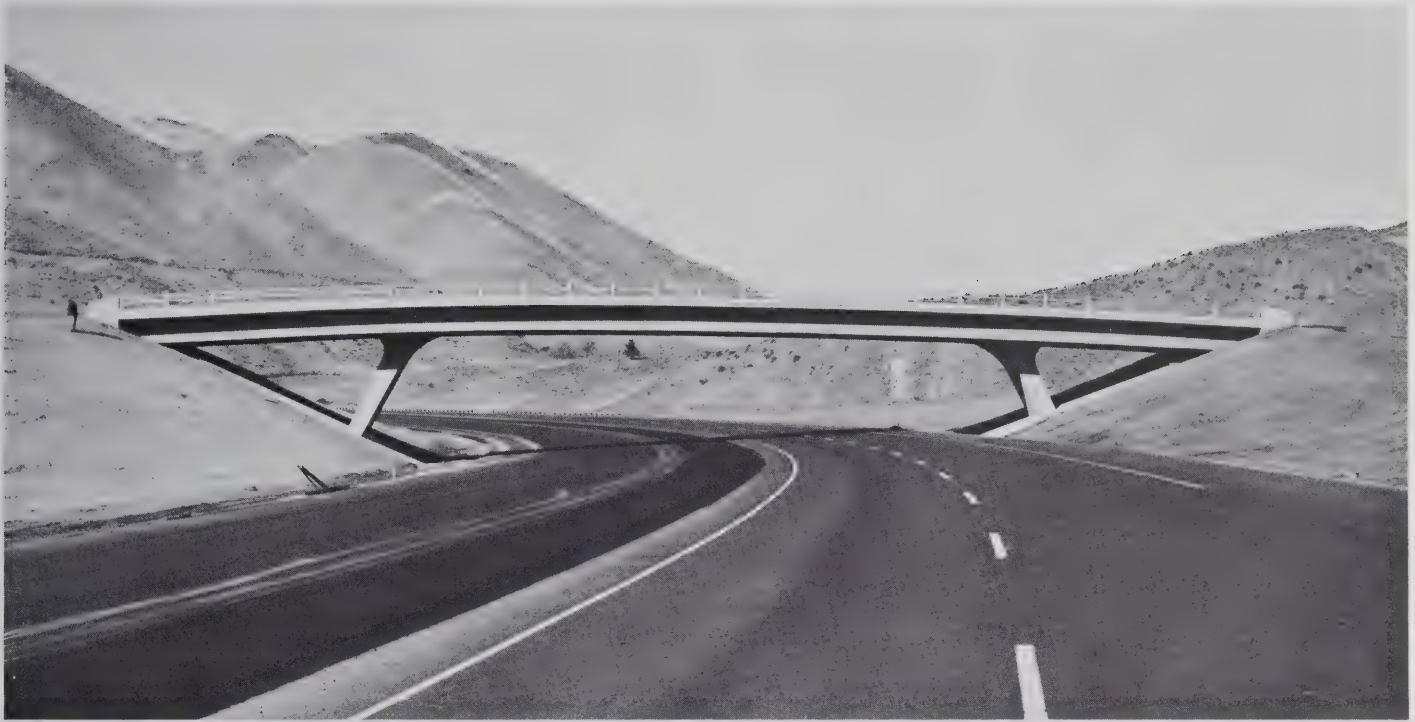
<i>FAS Route No.</i>	<i>Project Name</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
GILLIAM COUNTY			
440 & 446	Scott Canyon Cr. (Mikkalo Rd.) & Juniper Canyon Cr. (Olex) Brs.	Structures	\$ 60,000
HARNEY COUNTY			
824	Frenchglen Hwy.-Malheur Wildlife Refuge Hdqtrs.	Grading & Paving	700,000
MALHEUR COUNTY			
23-107	Bully Creek (Greenfield Rd.) Sec.	Structure	75,000
23-109	Malheur River (Malheur Butte) Br.	Grading, Base & Structure	136,000
23-119	Jordan Creek (Arock) Br.	Structure	74,000
MORROW COUNTY			
829	Irrigon Jct.-Middle Fork Juniper Canyon	Grading & Paving	449,000
UMATILLA COUNTY			
470	West Pendleton Intchge. Sec.	Grading & Paving	415,000
947	O.L. & W. Canal Bridge	Structure	31,000
UNION COUNTY			
948	State Ditch Bridge	Structure	85,000
948	Grande Ronde R. Bridge	Structure	145,000
957	Grand Ronde River (Clark Cr.) Br.	Structure	105,000

SPECIAL \$250,000 CITY ALLOTMENT PROJECTS

<i>City</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Heppner (Gale St.)	Grading & Oiling	\$ 30,000

SPECIAL \$250,000 CITY ALLOTMENT PROJECTS (Continued)

<i>City</i>	<i>Type of Construction</i>	<i>Construction Cost</i>
Island City ("D" St.)	Grading & Paving	15,000
Milton-Freewater (Elizabeth St. N.)	Grading & Paving	59,000



Weatherby-Lime Section of the Old Oregon Trail I-80N in Baker County

REGION V

State administrative districts 12, 13 and 14, encompassing the ten counties of Eastern Oregon, make up Region V. The land mass of the region is 40,331 square miles or approximately 41.5% of the area of the state. Approximately 6¼ percent of the state's population lives in this area. Region V is headquartered in the City of La Grande, lying in the Grand Ronde valley of Union County.

The region consists of varied geography and scenic attractions. Beginning at the juncture of the John Day and the Columbia Rivers, the rugged Columbia River Gorge blends into the rolling wheat lands. This rolling country meets the foot of the Blue Mountains east of

Pendleton with stands of timber and the scenic beauty of the rugged peaks in the Wallowa area. The Snake River Gorge eases as the river passes through Malheur County, and borders the lush farmlands in the "Treasure Valley" area near Ontario and Vale. In the southern portion of the region, semiarid, sage brush covered terrain and high desert is broken with streams and meadows and the Steens Mountains rise to dominate the view. Lakes formed by McNary and the John Day Dams on the Columbia River, Hells Canyon, Oxbow and Brownlee Dams on the Snake River and Owyhee Dam on the Owyhee River provide power, irrigation and recreational use.

The industry of the region is substantially oriented to agriculture, lumbering and tourism. Two ski areas operate during the winter months

and early spring; one at Spout Springs in the Blue Mountains near Tollgate, and one at Anthony Lakes in the Elkhorn ridge of the Blue Mountains near Haines. A tramway recently constructed near Wallowa Lake carries sight-seers up the side of the mountains to provide them with a spectacular view of the alp-like terrain.

Interstate Route I-80N crosses the region from the John Day River crossing of the Columbia River Highway to the Idaho Border, a distance of 263 miles. Freeway completed and open to traffic extends from the John Day River on the west to the foot of Emigrant Hill, east of Pendleton; from the top of Emigrant Hill to a

of these sections were approximately 22 million dollars.

At the beginning of the biennium, a total of 26 contracts were underway covering the construction or improvement of approximately 90 miles of highway and appurtenances with a total contract value of approximately 45.5 million dollars. Of these contracts, nine were for interstate highway construction or improvement with a contract value of approximately 37.6 million dollars.

During the biennium, 77 contracts were



The Old Oregon Trail I-80N under construction east of La Grande



UPRR Overcrossing on the 10th Street-Pendleton Section of the Oregon-Washington Highway

point just west of La Grande; from a point just east of Baker to Durkee; and from Weatherby Station to Farewell Bend on the east. Sections now under construction will complete the freeway with the exception of approximately ten miles lying west of North Powder.

During the biennium, three sections of I-80N were completed and opened to traffic.

- (1) West Unit, Pendleton-Emigrant Hill Section 4.41 miles, asphaltic concrete
- (2) La Grande Section 6.32 miles, continuously reinforced concrete
- (3) Weatherby-Lime Section 5.86 miles, asphaltic concrete. Cost

awarded for the construction or improvement of approximately 138 miles of highway and appurtenances, with a total contract value of approximately 84.7 million dollars. Of these projects, 17 were for interstate highway construction or improvement with a contract value of approximately 68.3 million dollars.

As a part of the interstate construction, a combination rest area and information center was constructed adjacent to the west-bound lanes of I-80N at Ontario to serve the needs of the traveling public as they enter Oregon from the east. Additional rest area facilities were included in construction contracts at Weatherby, Baker Valley, Ladd Canyon and a separate rest area contract at Deadmans Pass.

Safety improvement projects on the interstate system were completed between the John Day River and the City of Arlington to bring this section of highway within current safety design standards, and a section from Meacham to Hilgard Junction, west of La Grande, is now being improved in a similar manner.

A continuing program of improving highways other than interstate has been pursued throughout the region during the biennium. Approximately 11 miles of the Steens Highway east of Burns was widened and resurfaced, and 16 bridges were replaced. A 6.8 mile section of the ION Highway north of Jordan Valley was

on the La Grande-Baker Highway near the Hot Lake Resort southeast of La Grande provided a much needed improvement in alignment with the construction of an overcrossing of the Union Pacific Railroad and the appurtenant connections.

Beautification of interchanges and rest areas continued with the award and completion of landscaping contracts at several interchanges in Pendleton. Landscaping is included in the rest area information building complex at Ontario, and contracts for landscaping other rest areas along I-80N have been provided.



Paving equipment working on I-80N north of Weatherby in Baker County



Rest area facilities under construction on the Old Oregon Trail I-80N near Weatherby

widened and resurfaced, and an 8.6 mile section of this highway near Basque received a similar improvement. A four mile section of the Heppner Highway between Lexington and Heppner, and a three mile section of the John Day Highway south of Condon are currently being realigned and improved. A section of the Pendleton-John Day Highway north of Mt. Vernon 4.32 miles in length is currently under construction.

During the biennium, an 0.6 mile section of the Oregon-Washington Highway was completed, including an overcrossing of the Union Pacific Railroad, connecting to I-80N in Pendleton and carrying traffic into the easterly end of the city, to provide a more usable connection. A project



Interstate highway construction on the Old Oregon Trail I-80N near Weatherby in Baker County

INCOME AND



Old Oregon Trail Highway, I-80N, 4-lane construction near Weatherby

EXPENDITURES



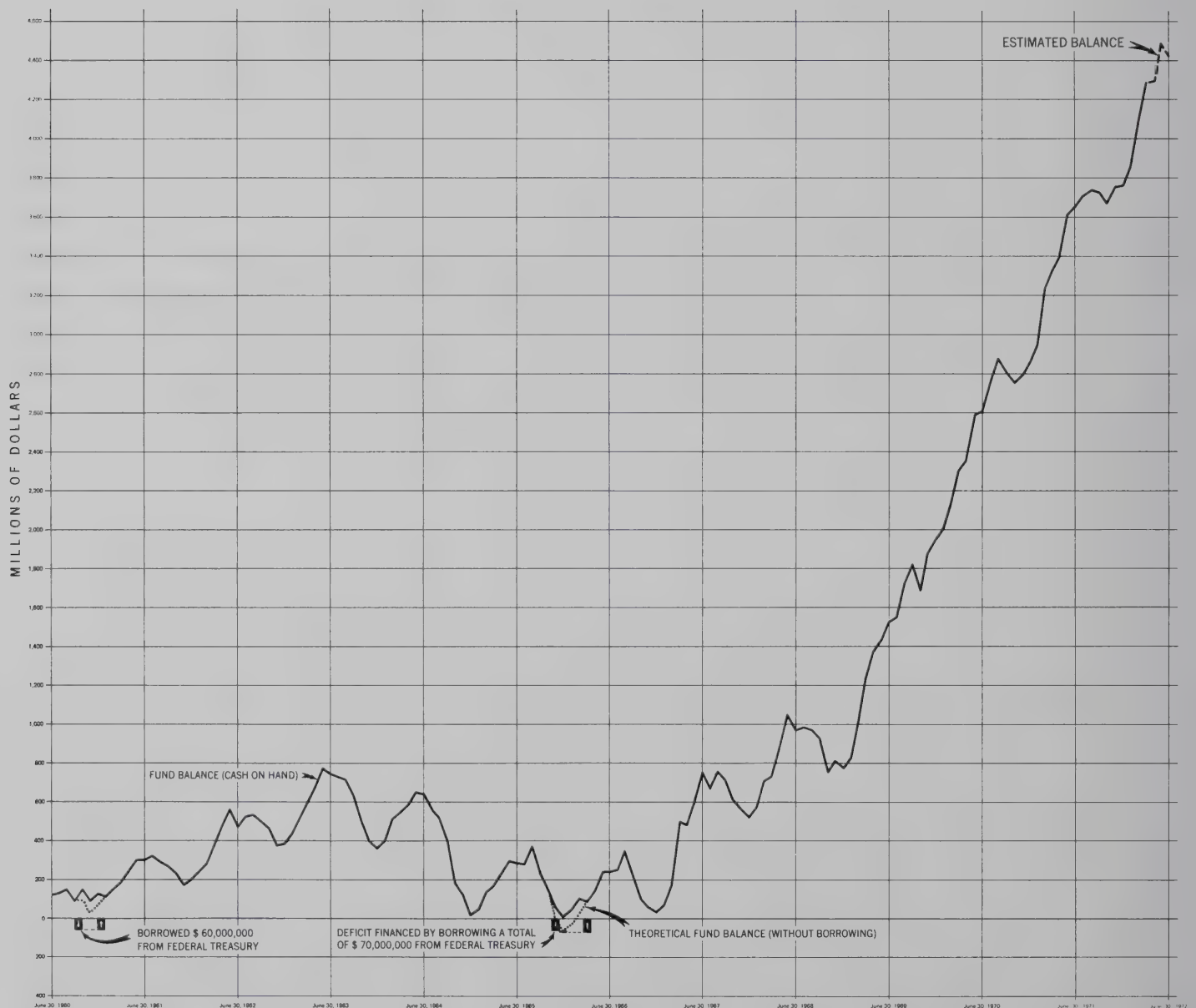
Structures on the East Portland Freeway, Highway I-205, in West Linn in Clackamas County.

Funds that are available to the Highway Commission for construction, maintenance and operation of the highway system, and for the development and operation of the state parks system, come from the State Highway Fund. This fund, which is held in the State Treasury, is deemed and held as a trust fund and may be used only for the purposes authorized. The Highway Commission is required by law to submit a biennial budget estimate and must limit expenditures from the highway fund to the budget amount approved by the legislature.

INCOME

Basically, income to the highway fund is derived from two sources: one by state taxation on gasoline, diesel fuel, the licensing of motor vehicles and operators, the assessment of motor carrier fees on commercial vehicles, and revenue from the sale of authorized highway bonds; the other is from federal sources that make funds available to the various states by means of the federal-aid highway acts that have been enacted by each Congress since 1916. Federal monies are obtained by taxation of gasoline and diesel fuels, tax on tires, tubes and tread rubber, tax on

FEDERAL HIGHWAY TRUST FUND



trucks, buses and trailers, and a commercial vehicle use tax. The use of federal funds is limited to construction or reconstruction. They are used in conjunction with state funds on a matching basis, and their use is supervised and controlled by the Federal Highway Administration. All states are dependent on these federal funds to finance new work, and highway construction activity in the United States would be small, indeed, without this source of revenue. Federal funds are made available on a reimbursement basis. The state pays for the construction cost in the first instance and is later reimbursed for those items of cost that the

government deems eligible.

Prior to 1956, Congress provided federal monies by appropriations from the general fund, but beginning in 1956, they created what is known as the Federal Highway Trust Fund. This fund is composed of the income from federal taxes on motor fuels; taxes on sales of new trucks, buses and trailers; taxes on tires, inner tubes and tread rubber; and an annual heavy vehicle use tax. Expenditures from this fund are limited to payments to the states for the federal share of federal-aid highway construction and for general administrative expenses of the Federal

FEDERAL MOTOR VEHICLE TAX RATES AND COMPOSITION OF FEDERAL HIGHWAY TRUST FUND

Tax schedule under existing law 1/1/71.

<i>Name of Tax</i>	<i>Present Total Rate</i>	<i>Rate Prior to 1956</i>	<i>Effective Date of Increase or Decrease</i>	<i>Under Present Legislation Total Rate After 10/1/77</i>	<i>Percent to General Fund</i>	<i>Percent to Highway Trust Fund</i>
Gasoline (per gallon)	\$.04	\$.02	\$.03— 7/1/56 \$.04—10/1/59	\$.015		100%
Diesel and Special Fuels (per gallon)	\$.04	\$.02	\$.03— 7/1/56 \$.04—10/1/59	\$.015		100%
Lubricating Oil (per gallon)	\$.06	\$.06		\$.06	Prior to 1/1/66 100%	Begin 1/1/66 100%
Trucks, Buses and Trailers* . . (percent of manufacturer's sales prices)	10%	8%	10%—7/1/56	5%		100%
Parts, Accessories† (percent of manufacturer's sales prices)	8%	8%		5%	Prior to 1/1/66 100%	Begin 1/1/66 100%
Tires (per lb.)	\$.10**	\$.05	\$.08— 7/1/56 \$.10— 7/1/61	\$.05		100%
Inner Tubes (per lb.)	\$.10††	\$.09	\$.10— 7/1/61	\$.09		100%
Tread Rubber (per lb.)	\$.05	None	\$.03— 7/1/56 \$.05— 7/1/61	None		100%
Motor Vehicle Use Tax*† . . . (per 1,000 lbs.)	\$3.00	None	\$1.50— 7/1/56 \$3.00— 7/1/61	None		100%

*House trailers and school buses exempt.

†Tax on truck and bus parts and accessories only after 1/1/66. Tax on auto parts and accessories repealed 1/1/66.

**The \$.03 and \$.02 increase effective July 1, 1956 and July 1, 1961 applies to tires for highway vehicles only.

††The \$.01 increase effective July 1, 1961 applies to inner tubes for highway vehicles only.

*†Applicable to entire gross weight when vehicle exceeds 26,000 gross weight. Buses in local transit services exempt.

Highway Administration. It is the responsibility of the Secretary of the Treasury and the Secretary of Transportation to make frequent estimates of the amounts available in this fund, and when it appears that there are insufficient monies in the fund to cover congressional authorizations to the states, it is their responsibility to reduce the states' apportionments to a level that the trust fund can finance. This has been accomplished by administrative action on the part of the Federal Highway Administration by apportioning lesser amounts of federal monies to the states than was authorized, and by setting up a system of contract controls

which limits the amount of federal-aid work that the states can place under contract in any quarter.

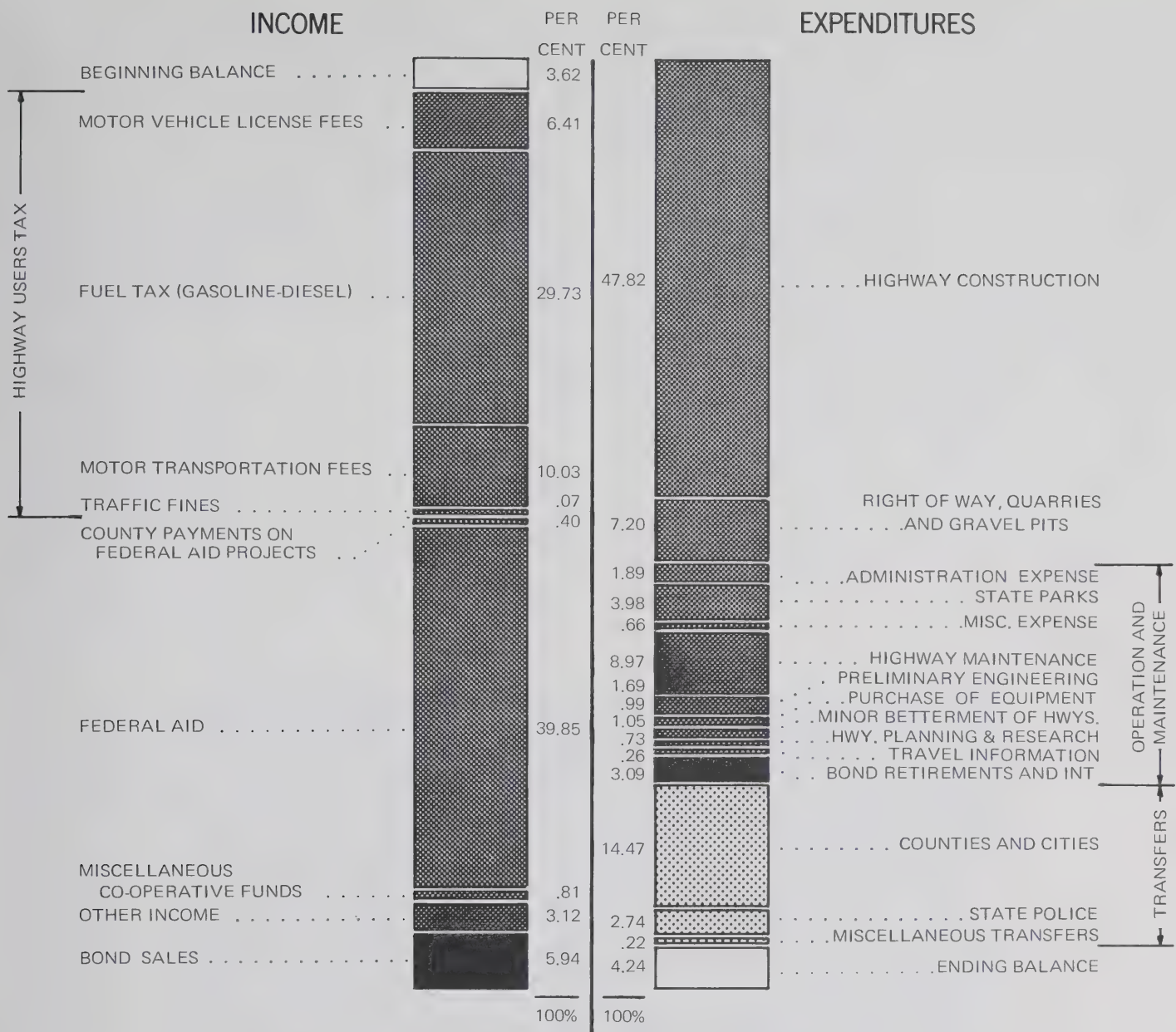
The Federal Highway Act of 1956, as amended in subsequent years, has authorized appropriations for the Interstate highway system for a 20-year period in the amount of \$60,210,000,000. For the fiscal years 1960 through 1966, Interstate funds were apportioned to the various states in the ratio that the total cost of completing the system in a particular state bears to the total cost of completing the entire system. Beginning with fiscal year 1967,

FEDERAL-AID HIGHWAY AUTHORIZATIONS

1956 Act as Amended

(Thousands of Dollars)

<i>Fiscal Year</i>	<i>National Authorization</i>			<i>Oregon's Share</i>	
	<i>Interstate</i>	<i>A.B.C.</i>	<i>Total</i>	<i>Interstate</i>	<i>A.B.C.</i>
1957	\$1,000,000	\$ 125,000	\$1,125,000	\$13,576	\$ 1,862
1958	1,700,000	850,000	2,550,000	23,079	12,663
1959	2,200,000	1,275,000	3,475,000	29,510	18,738
1960	2,500,000	900,000	3,400,000	43,108	13,347
1961	1,800,000	925,000	2,725,000	30,882	12,379
1962	2,200,000	925,000	3,125,000	37,530	12,215
1963	2,400,000	925,000	3,325,000	41,570	12,863
1964	2,600,000	950,000	3,550,000	45,034	13,073
1965	2,700,000	975,000	3,675,000	46,529	13,255
1966	2,800,000	1,000,000	3,800,000	48,498	13,799
1967	3,000,000	1,000,000	4,000,000	52,037	13,796
1968	3,400,000	1,000,000	4,400,000	59,215	13,889
1969	3,800,000	1,000,000	4,800,000	66,082	13,854
1970	4,000,000	1,425,000	5,425,000	84,592	19,042
1971	4,000,000	1,425,000	5,425,000	84,162	18,970
1972	4,055,000	1,425,000	5,480,000	86,985	18,883
1973	4,055,000	1,425,000	5,480,000		
1974	4,000,000				
1975	4,000,000				
1976	4,000,000				



INCOME

EXPENDITURES

JULY 1, 1970 TO JUNE 30, 1972 ESTIMATED

Beginning Balance		\$ 18,201,000
Motor Vehicle License Fees	\$ 32,300,000	
Fuel Tax (Gasoline-Diesel)	149,804,000	
Motor Transportation Fees	50,657,000	
Traffic Fines	347,000	
Subtotal (Highway Users Tax)		\$233,109,000
County Payments on Fed. Aid Proj.		2,139,000
Federal Aid		200,847,000
Miscellaneous Co-op. Funds		4,078,000
Other Income		15,727,000
Bond Sales		30,005,000
Total Income		\$504,106,000

Highway Construction		\$241,011,000
Right of Way, Quarries and Gravel Pits		36,280,000
Administration Expense	\$ 9,546,000	
State Parks	20,083,000	
Misc. Expense	3,318,000	
Highway Maintenance	45,200,000	
Preliminary Engineering	8,500,000	
Purchase of Equipment	5,000,000	
Minor Betterment of Highways	5,300,000	
Hwy. Planning & Research	3,700,000	
Travel Information	1,300,000	
Bond Retirements and Interest	15,504,000	
Subtotal (Operation and Maint.)		\$117,451,000
Counties and Cities	\$ 73,045,000	
State Police	13,795,000	
Miscellaneous Transfers	1,125,000	
Subtotal (Transfers)		\$ 87,965,000
Ending Balance		21,399,000
Total Expenditures		\$504,106,000

funds are apportioned in the ratio that the federal share of the cost of completing the system in a particular state bears to the federal share of completing the entire system. At present Oregon receives approximately 2.19% of Interstate funds.

Federal funds for non-interstate federal-aid highways, which are commonly referred to as the ABC system, are usually provided every two years by Congress. At present, the national authorization is \$1,425,000,000 for each of the fiscal years 1972 and 1973, with Oregon's share being about 1.4% of the total. Federal law provides that 45% of the authorization go on the primary system, 30% on the secondary system, and 25% on urban extensions of primary and secondary systems within urban areas. Primary funds are apportioned to the various states on the basis of 1/3 on the state's population ratio, 1/3 on the state's area ratio, and 1/3 on the state's post road mileage ratio. Secondary funds are apportioned on the basis of 1/3 on the state's rural population ratio, 1/3 on the state's area ratio, and 1/3 on the state's post road mileage ratio. Urban funds are apportioned on the basis of the state's urban population ratio.

DISBURSEMENTS

The major item of expenditure is highway construction. This expenditure is eligible for

federal aid, and the state is reimbursed up to the amount of the federal share. Construction expense includes expenditures for contract work on the federal Interstate and ABC systems; beautification projects; and the state, bond and city allotment construction projects.

The cost of acquiring rights of way, quarries, gravel pits, and other real properties has become a major activity of the Highway Division. Complications and difficulties relative to this procedure are increasing as our state grows and develops. The cost of right of way is eligible for federal-aid as long as certain federal regulations are rigidly followed. At present, it is the practice to request federal-aid on all Interstate highways right of way; but on ABC system right of way, federal-aid is sought only on the major projects. There are never enough federal ABC funds to meet all the demands, and it is felt that the public interest is best served by using these federal monies for construction purposes and using state funds to acquire the small or modest-sized right-of-way projects.

State parks expenditures include the administration, acquisition, development and operation of the State Parks and Recreation Section.

Operation expense represents the cost of truckload inspection and issuance of permits, cost of operating and maintaining the Division and

DETAIL OF BOND PAYMENTS

July 1, 1970 to June 30, 1972

<i>Date of Issue</i>	<i>Payment on Principal</i>	<i>Payment of Interest</i>
\$15,000,000 Issue October 1, 1951	\$ 1,500,000	\$ 22,500
\$15,000,000 Issue March 1, 1952	1,500,000	39,375
\$10,000,000 Issue March 1, 1953	1,000,000	50,000
\$20,600,000 Issue November 1, 1957	3,200,000	384,000
\$20,000,000 Issue January 1, 1962	2,400,000	664,000
\$12,000,000 Issue March 1, 1963	800,000	553,600
\$15,000,000 Issue September 15, 1970	750,000	1,334,437
\$15,000,000 Issue January 5, 1971...	750,000	750,000
	<u>\$11,900,000</u>	<u>3,797,912</u>

State Police radio systems, cost of conducting planning and traffic surveys, cost of drawbridge operation, and costs incurred in conducting highway research activities.

Highway maintenance expenditures are entirely from state funds, with no federal participation. This cost represents maintenance of roadway, shoulders, structures, snow removal, litter pickup, roadside vegetation control and traffic control facilities.

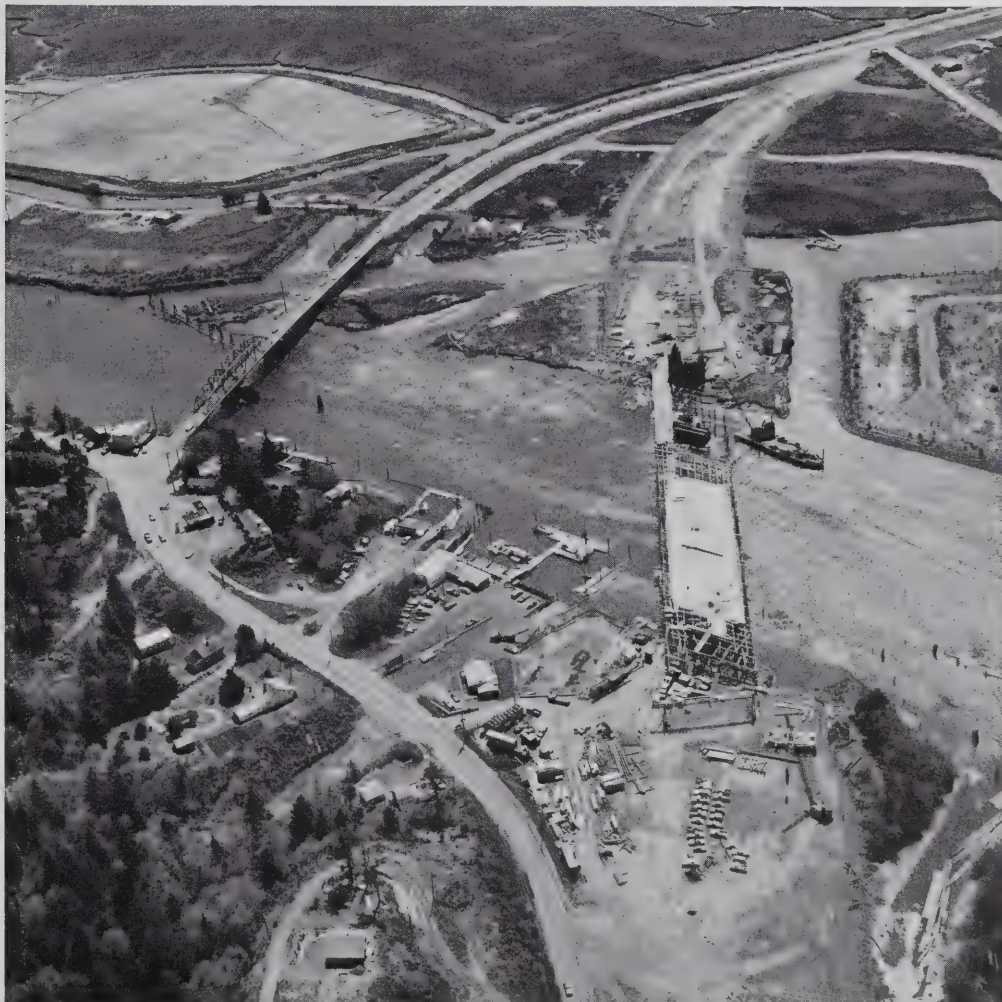
Preliminary engineering covers all work necessary to prepare plans and specifications for a highway construction project. Included are reconnaissance, preliminary and location surveys, design of structures, roadbed, surfacing, drainage facilities, preparation of specifications, and other incidental items which may be required prior to actual construction. This item is eligible for federal-aid, which is requested on all Interstate

projects and on the larger ABC jobs.

Building and equipment expenditures include costs of construction, betterment and maintenance of shop, sign and maintenance buildings. The expense of acquiring snowplows, trucks, automobiles, shop, radio, parks, office, engineering, laboratory, and blueprint equipment is also included in these costs.

Minor betterments are those items of cost incurred in the installation of traffic signals, reinforcement and repair of pavements, improvement and widening of shoulder areas, and the improvement of bridges and drainage facilities.

At the time bond projects mature, federal-aid may be collected on the principal payment provided federal monies are available for programming.



Aerial view of the Siletz River Bridge construction on the Oregon Coast Highway US101

PROJECTED



Fremont Bridge over the Willamette River in Portland on the Stadium Freeway, I-405

ACTIVITIES

Future operations of the Highway Division are dependent upon continued federal aid and other increased financing to cover the basic highway needs.

The problem in Oregon falls in two categories: first, our prime industries of agriculture, forest products, tourism and recreation are all rurally oriented; second, our most pressing problem is the one of moving people from their bedrooms to the work in the industrial area. It is well to remember that on the highway system in Oregon an excess of 40 percent of the ton-miles of traffic per year is truck traffic involved in the movement of goods.

There are conflicting legislative proposals before the Congress which will affect future federal aid. It is currently believed that the Interstate program will continue on approximately the same level of funding with additional funds being provided for construction of improved urban transportation facilities including mass transit. There are conflicting proposals involving these



The Three Sisters tower above Scott Lake

grant-in-aid programs before the Congress. There may be some form of revenue sharing or there may be direct grants to the cities or to a combination of cities and counties. The Congress convening in January of 1973 is expected to give these proposals serious attention. The dire need of transportation facilities should dictate that programs not be reduced, but there is no assurance that such will not occur.

Another proposal before Congress concerns the realignment of the state highway system along lines of functional classification. The present connotation of primary, secondary, and urban highways may become obsolescent. No definitive action has been indicated by the present or future Congress at this time.

A study of the extremely critical needs for improvement in the state highway system indicates that funding at the present level will fall \$100,000,000 short of eliminating these bottlenecks during the next ten-year period. A list of the most critical needs includes only those segments of highway or improvements which hamper the day-to-day movement of people and goods throughout the state. It does not include many much-needed improvements which would eliminate bottlenecks, accidents and confusion

caused by the weekend vacation travel loads. We feel it is imperative that additional financing in the amount of at least \$10,000,000 per year be provided over the next ten years in order that a complete breakdown of the transportation system does not occur.

The present federal law has set a new matching ratio for ABCD highways to become effective July 1, 1973. The nominal ratio would be 70 percent federal and 30 percent state, which would give Oregon, due to its public land status, an effective ratio of 78 percent federal and 22 percent state. This, though not increasing the amount of federal funds, would have the effect of freeing some state matching funds for state-selected projects.

Efforts will be concentrated on early completion of I-205 during the coming biennium. The basic rural Interstate system is completed or under construction and is adequate for present traffic. Portions of the Interstate system in Portland are presently operating over design capacity; the completion of peripheral I-205 would help to relieve this situation. To accomplish this, resources available for Interstate highway construction will be utilized in the amounts deemed prudent. The Oregon-



Crooked River flows at base of Smith Rocks

Washington bridge, east of the Portland International Airport will be started as a part of the accelerated program, but will not be finished during the next biennium.

The Highway Division has in the past biennium taken steps to ensure citizen participation in its many programs. Every facet of a project is publicly examined for ecological, environmental, social and economic consequences. Opinions are solicited on all the above, in addition to extensive hearings, meetings with groups, and taking into account multidisciplinary design recommendations. It is foreseen that this approach to public works will be continued and expanded during the coming biennium to the end that any citizen who has an interest may have his suggestion or opinion considered.

The past biennium saw the Highway Division embark on a bicycle program by direction of the Legislature. Much of this period was devoted to studies to determine areas where bicycle paths would be of greatest benefit to bicycle enthusiasts, whether for pure transportation or recreation. Integration of the highway studies and plans with those of the counties and municipalities has progressed to such a point that an accelerated construction program will be under

way during the coming biennium.

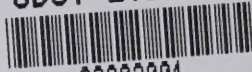
The State Parks and Recreation Section of the Highway Division has been engaged in land acquisition along the Willamette River Greenway during the past biennium and will continue this program on the 150 miles of Willamette Riverfront involved. It is further anticipated that considerable development work on the lands so acquired will commence during this period.

Several planning and project studies will be initiated and the state park long-range plan, last published in 1961, will be updated. The statewide recreation plan will be updated as a prerequisite to obtain federal aid for outdoor recreation.

A study to provide a long-range trail program in Oregon -- an outgrowth of the Oregon Recreation Trails Law adopted by the 1971 Session of the Legislature -- will be completed. Further studies will also be undertaken with regard to rivers and streams for possible inclusion in the State Scenic Waterways System.

Development of beach access sites purchased in previous bienniums will go forward.

ODOT LIBRARY



00003001

